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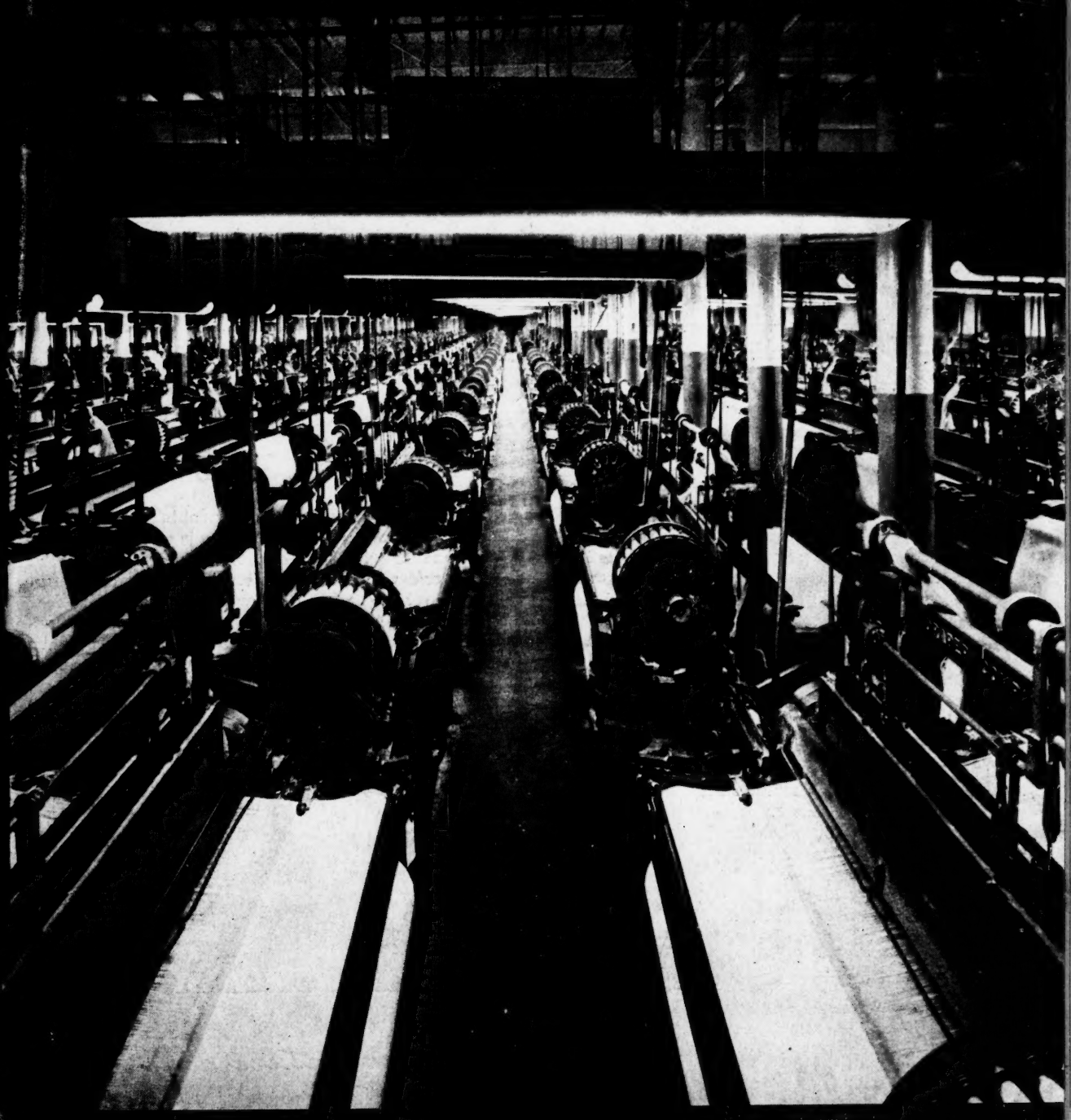

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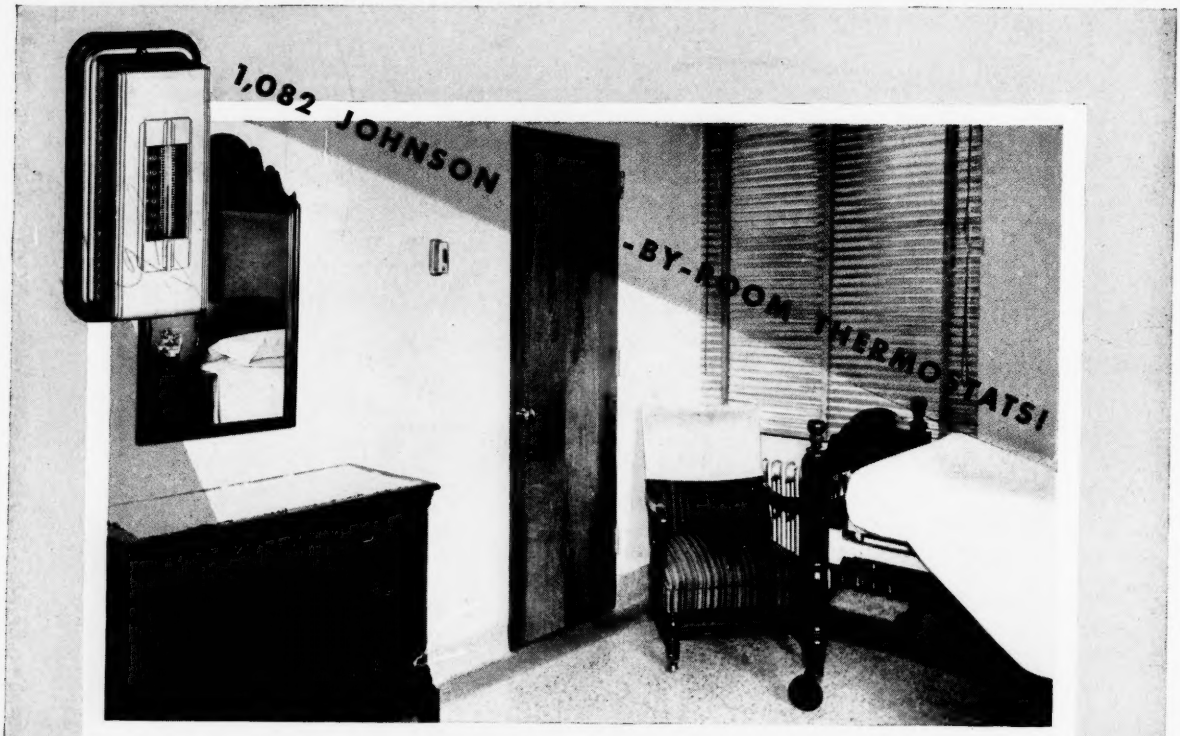

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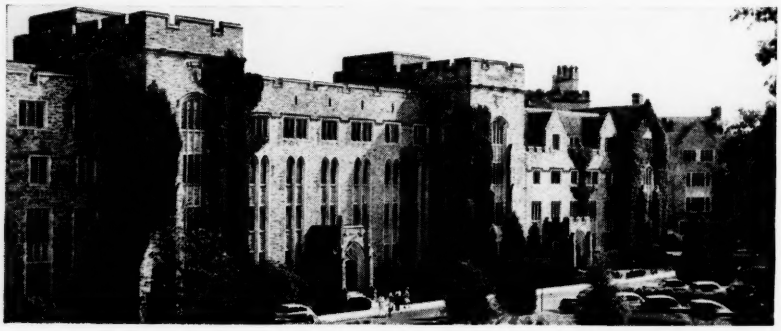

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MANUFACTURERS RECORD

ESTABLISHED 1882

A Publication for Executives

Volume 115 **JANUARY, 1946** **Number 1**

EDITORIALS

Labor at the Crossroads 67
The Magnolia State 72

ARTICLES

MISSISSIPPI **73**
Agriculture 77
Manufacturing 81
Petroleum 87
Minerals 89
Forests 90
Power 92
Transportation 93
Education 96
Government, Finance 99
Recreation 101

Southwest Destined to be Bright Spot—by W. N. Deramus 105
Pullman, 80-Year-Old Service is Sold to the Railroads 106
Wages, Prices and the Forgotten People—by Martin L. Davey .. 108
Bendix Expanding in Maryland to Produce Home Radios 109
Southern States Share Big in $300,000,000 DuPont Program —by Henry O. Belleville 110
Third Unit Makes Atkinson Largest Power Generating Plant in Georgia 112
Citrus Cooperative Expands in Florida 114
Reynolds Leases Plants in Arkansas 115
Making Talk Cheaper—by Carl D. Hart 116
Research for Southern Industry 118
Fair Employment Practice—by George H. Fisher 120
Big Lumber Treating Plant Slated for South Carolina 121
The Veteran Returns—by Dorothy Haller 124
New Decorticator Seen Boon to South's Ramie Growers 126
Southern Industry Expansion Closely Related to Reconversion .. 40
Riding Down the Rider 48
Two-Thirds of Appalachian Miners Own Their Homes 56
Southern Pulpwood Industry Offers Thousands of Jobs 64

DEPARTMENTS

Little Grains of Sand 8
Southern Industrial Expansion 122
News from Industry 128, 130, 132
Trade Literature 134
Index for Buyers 174
Index of Advertisers 176

Cover Illustration: Interior of a Mississippi textile mill.

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ANALYSTS OF INSURANCE PROBLEMS

SELF INSURANCE

When is it desirable?

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Little Grains of Sand

"Little drops of water, little grains of sand,
Make the mighty ocean, and the pleasant land."

Perhaps one of the best ways to focus attention upon the rising tide of public servants is to demand that a monthly report be made giving the figures or total number of employees at the beginning of the preceding month; next, the total number of new employees added; third, those released during the month. These statistics are available now, but they are not emphasized enough. When the American people are fully informed on a subject, and such information is alarming, they usually act with dispatch.

The announced intention of the peanut industry to spend a million dollars promoting its product is a reassuring indication that the unprecedented demand for the once lowly goober is to continue.

The war has resulted in a tremendous expansion in the peanut market. It was introduced to every part of the world and an export demand thus created which will grow in volume in the years ahead. Moreover, because of their shipping qualities and appetizing appeal, peanuts and peanut products were given the men in service in tremendous quantity and variety. They, too, will contribute to the growing domestic market.

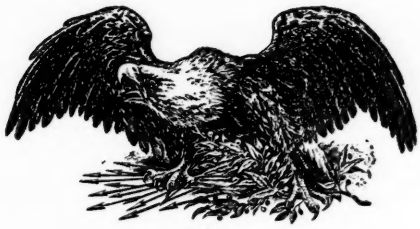
Senator Byrd, long a consistent advocate of government economy and a member of the joint committee on nonessential federal expenditures, points out that the federal civilian personnel at present totals 3,649,769 as compared with 932,953 in August 1939, and 917,760 on Armistice Day, 1918. The Senator invited special attention to the fact that there are 848,644 federal civilian employes outside the United States, and suggested that the entire federal payroll be reduced to about a million employes.

According to a release of the Department of Commerce Bureau of the Census, farmland throughout the country increased 82,000,000 acres in the last five years and the number of farms dropped 86,000. By "farmland" is meant all land devoted to farm production, including ranches.

The unusual demand for all farm production during the war accounts for the general gain in farm acreage. Man power going into military service and to war plants probably accounts for there being fewer farms.

Tennessee ranks as one of the fastest growing apparel manufacturing states in the nation. It is the country's leading producer of work shirts and, in the production of work clothes generally, is exceeded only by Missouri and New York. Tennessee's annual output of work clothes, exclusive of work shirts, was valued at over $14,000,000 in 1939.

(*Continued on page* 16)



"What Enriches the South Enriches the Nation"

LABOR AT THE CROSSROADS

Labor unionism is big business. Under the American system of free enterprise, big business incorporates, and labor unions should be incorporated—enjoying the privileges and immunities of corporations and likewise observing their laws and responsibilities. Whether this condition be brought about by law or by voluntary action of unions it would be to the long range advantage of American workmen if it were done.

Labor bosses may be the last to concur in this opinion. And this is not strange. Labor bosses have built their empire by following a policy of immediate expediency. It is a policy of taking all; giving nothing in return, and from the bosses' standpoint it has been highly successful.

There is an old adage that says: "Every dog has its day." But when the day is done, the dog for all practical purposes is done also.

The signs are too obvious to be ignored that the take-all, give-nothing policy fostered by selfish labor union leaders is nearing or at the end of its day. Like all other policies carried far beyond any useful purpose, it has struck the inevitable snag of public revulsion. Signs are obvious that labor bosses realize a new era impends. Their wails at the hearing on President Truman's proposal were too frantic and fraught with hysteria to register an impression of assurance in the righteousness of their stand. On the one hand they were sponsoring fact finding; on the other they were denouncing it.

President Truman has announced that fact finding will require not only the opening of corporation books to show costs and profits—but—the unveiling of union financial accounts.

This may conceivably spell the end of American free enterprise and the beginning of government slavery for the wage-earner. The chickens that the labor leaders hatched are coming home to roost.

The pitiable part is the fraud that has been imposed on the rank and file of American workers. Led, or rather driven, to believe that "take-all—give-nothing" held prospects of greater freedom and higher living standards, they are now on the brink of learning that it means directly the opposite. Opening of books for costs and profits can eventually mean nothing less than a regimented rate of profits. If labor is under any illusion that such a formula can be maintained without corresponding regimentation of rates of wages, it is blindly attempting to reason without logic. Standards of living appear on their way to being pegged at bureaucratic appraisals of proper levels unless capital and labor swiftly reconcile their differences by American-made methods. Labor would promote its cause if it would admit that it is now big business and take steps to make itself legitimate big business in the eyes of the public and of the law.

STATE OF MISSISSIPPI
EXECUTIVE DEPARTMENT
JACKSON

THOMAS L. BAILEY
Governor

December 5, 1945

A MESSAGE FROM THE GOVERNOR OF MISSISSIPPI

No other state in the nation today offers the inducements to private enterprises which Mississippi affords.

Ideally situated in the heart of the great South market, Mississippi is, by virtue of its mild climate, variety of soil, quality of labor, raw materials, and resources, indeed America's State of Opportunity.

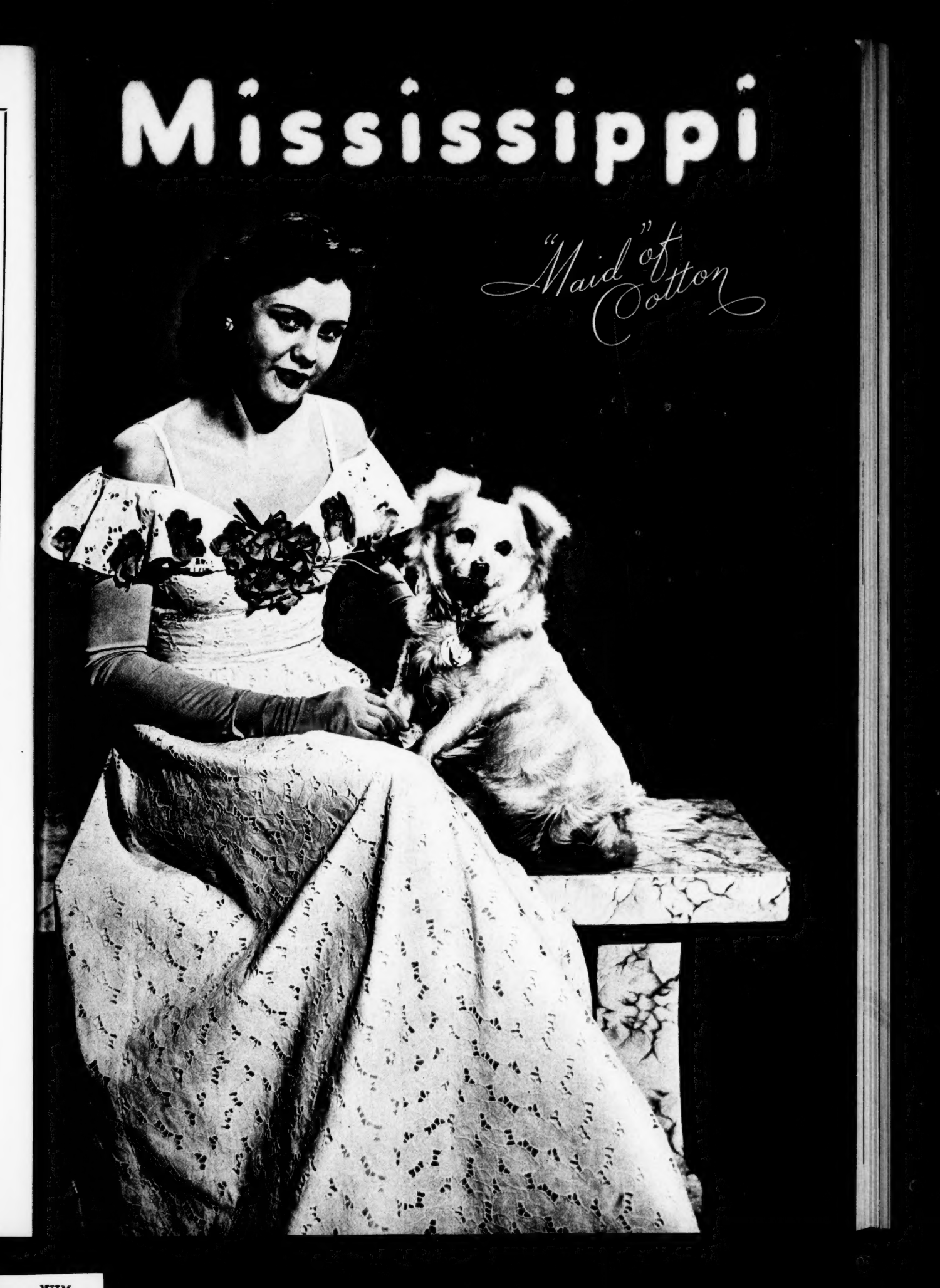
Primarily an agricultural state, Mississippi today is successfully "balancing agriculture with industry" through a unique plan enacted by the 1944 Legislature, which is commonly known as BAWI.

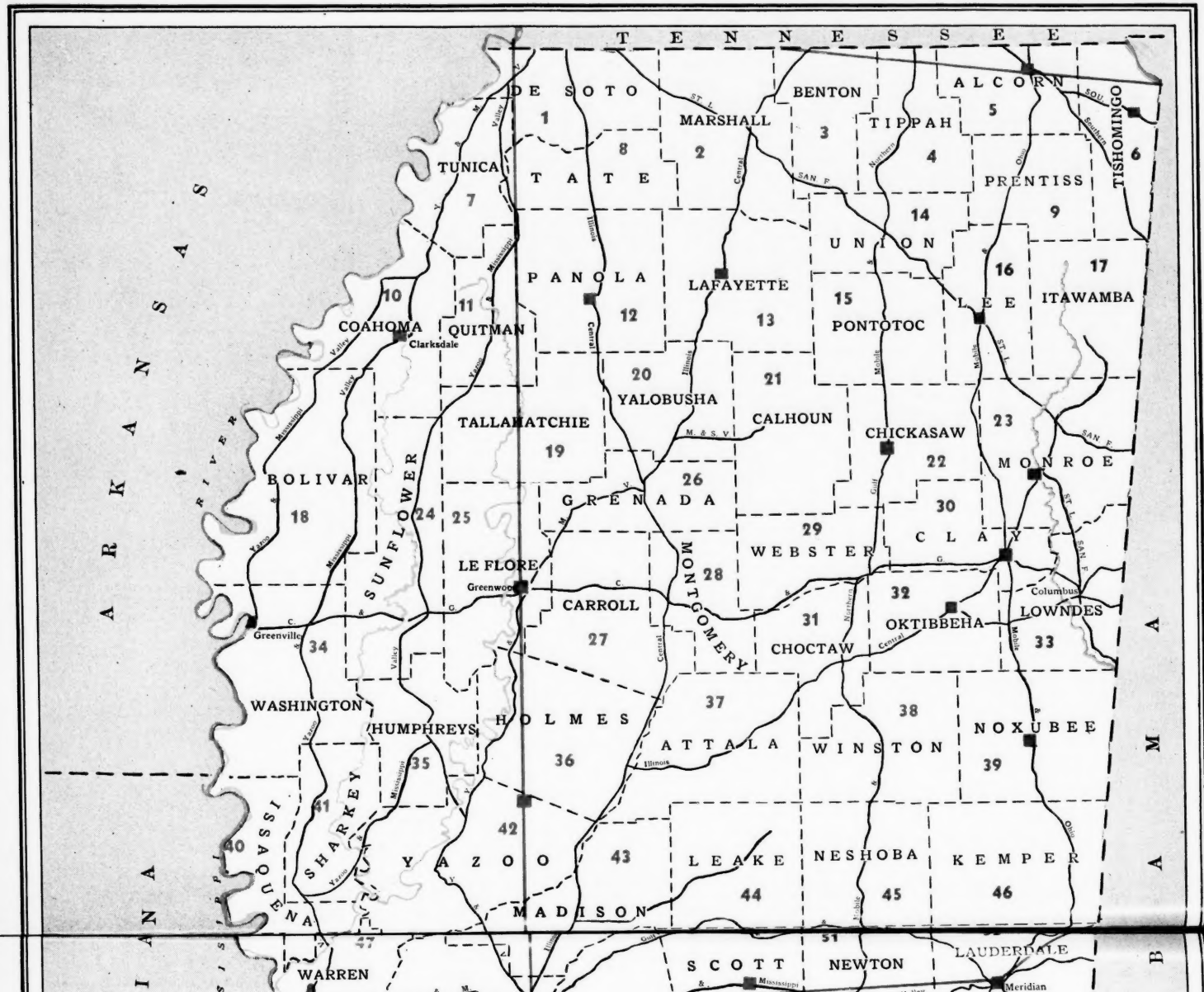
The BAWI plan, the success of which has already been proved in Mississippi, offers locally financed plants to new or established industries desirous of locating in this state.

In this way, the State of Mississippi proves that its government is a friend of private enterprise, committed to a policy of fair dealing with all persons engaging in activity within our borders.

As Governor of the State of Mississippi, I extend this invitation to industry to consider Mississippi, if contemplating location of new plants. I speak for Mississippi citizens who have faith enough in their own communities to invest their money in manufacturing plants for private enterprise.

Thos. L. Bailey
GOVERNOR


Mississippi
"Maid" of Cotton



MISSISSIPPI

Its principal raw materials and transportation facilities offering opportunities for industry, with additional facts in the accompanying articles pertaining to industry and its growth within the state.

Minerals—Counties in which material is commercially produced.

Bentonite—9, 17, 56

Clay—2, 5, 9, 12, 15, 16, 17, 19, 23, 33, 37, 38, 48, 52, 62, 74, 82

Natural Gas—23, 48, 49, 53, 60, 64, 72, 73

Paint Pigment—3, 50, 52, 74

Petroleum—41-43, 57-62, 64, 67, 72, 73

Sand and Gravel—6, 12, 19, 23, 27, 33, 34, 36, 39, 47, 48, 54, 60, 61, 62, 70, 75, 77, 80, 81

Sandstone—6

Agricultural products

Corn—All counties

Cotton—All counties

Oats—1-4, 6-13, 16, 18-79

Oranges—77, 80, 81

Peanuts—All counties

Soybeans—All counties

Sugar cane — 5-9, 11-15, 17-82

Sweet potatoes—All counties

Tung oil—70-82

Fisheries—47, 60, 80-82

MADISON
WARREN
Vicksburg
Jackson
HINDS
RANKIN
SCOTT
NEWTON
LAUDERDALE
Meridian
SMITH
JASPER
CLARKE
CLAIBORNE
COPIAH
SIMPSON
JEFFERSON
Natchez
ADAMS
FRANKLIN
LINCOLN
LAWRENCE
JEFFERSON DAVIS
COVINGTON
JONES
Laurel
WAYNE
WILKINSON
AMITE
PIKE
McComb
WALTHALL
MARION
LAMAR
Hattiesburg
FORREST
PERRY
GREENE
PEARL RIVER
STONE
GEORGE
HARRISON
JACKSON
HANCOCK
Gulfport
LOUISIANA
ALABAMA
MISSISSIPPI
Illinois Central
Gulf
Mississippi
Valley
Yazoo
Southern
Mobile
Central
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THE MAGNOLIA STATE

Mississippi, deep in the heart of Dixie—land of loamy soil, magnolia blossoms and traditions—a land that is a domain in itself. Yet more than mere land or domain—verily a way of life, conditioned by the land that embosoms its sons and daughters. And those sons and daughters constitute the soul of the Mississippi way of life. In them abides the heritage that transports from the past to the present the pristine virtues of a virile new world in which adventure, humor and philosophy are blended with firmness of purpose.

As rich in tradition as in soil, Mississippi can point to episodes in its history that rival many an imaginatve story in color and drama. Adventurous pioneers, artists, noted statesmen, all have played their part in this dramatic saga. Men, strong in war and peace, have helped to fill the pages. Mississippi has been the scene of mighty battles and colorful pageants. Yet through its story, like an integrating thread, runs the Mississippian's undying love for his land. Unlike Anteus, the mythological giant who lost his strength and met destruction by permitting his feet to leave his Mother Earth, Mississippians have kept their feet firmly planted on their soil.

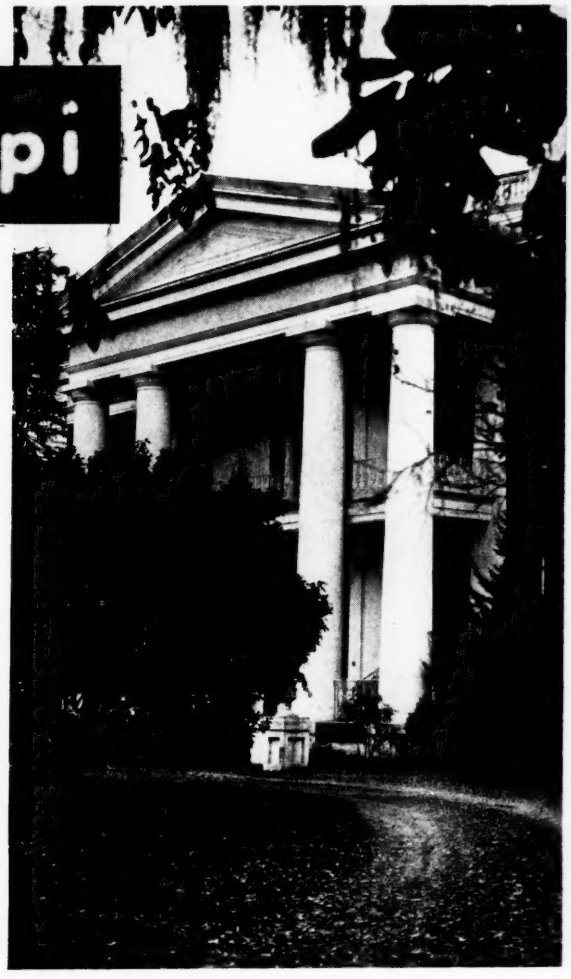
Like all earth-rooted individuals, they are independent and slow to change. They place emphasis on permanence, family background and conservatism. The mansions of Mississippi are enduring mansions. The families of Mississippi trace themselves afar back. Isms are strangers to the Mississippian. Earliest Mississippians gave up wealth and leisure in other lands to escape tyranny. A spirit of resolute independence has been handed down to those of today as a heritage from a freedom-loving ancestry.

These characteristics persist—even as the state welcomes industrial progress and envisions new uses for its land. In these uses the land will not be debased. It will be glorified.

The machine age has come to Mississippi. Oil wells are gushing. New factories are humming. A spirit of enthusiastic industrial development is alive throughout the state. Mississippians are doing more than talking now of their new industrial era.

The glories of the past need not fade. They can enhance the values of the new present and future. The Mississippian of today, with his background of self-reliant land ownership and his newborn vision of twentieth century industrial enterprise, needs only to press the button of inherent genius to send his state scaling the heights of machine-age progress.

Mississippi



An ante-bellum mansion.

New landmarks of progress loom in the offing for Mississippi in the heart of the enlivened South. A rising tempo of agricultural improvement and industrial expansion is being blended with bygone glories of historic importance and romantic glamor. Today its leaders are forging a distinctive pattern encompassing an integrated culture and versatile economy. In this it is justifying predictions made in earlier days. As far back as 1819, a historian of that time wrote: "There are few states in the union so highly favored as Mississippi in variety of soil and climate. The climate being temperate and most of the surface elevated and salubrious, few regions so extensive afford greater natural means for the permanent prosperity of human society."

Such seems to have been the impression of its earliest settlers. Beginning almost with the discovery of the New World, unceasingly daring efforts were made to conquer and settle the region, history of which began nearly a hundred years before the Pilgrims landed at Plymouth Rock.

Taking its name from the Indian designation of the mighty river that forms its western boundry, "missi" meaning great and "sepe" meaning water, and later dubbed the "Magnolia State" by reason of that tree's luxuriant prevalence, the section at once became the scene of determined rivalry between nations to gain its control. Spain, France, England and later the United States clashed with one another to claim as their own the rich lands of the Mississippi Valley. Fired by this incentive, the most daring and energetic sons of four nations lent their endeavors to its development. Through its centuries Mississippi has been molded by such men—men inspired by their belief in individual freedom and initiative. Their spirit remains as a heritage for Mississipians of today, ninety-seven per cent of whom are native-born stock.

The first sector of the state to become settled was the fertile area along the river. There, landowners quickly acquired wealth and established what is known today as the Old South atmosphere. In large part it is still today a land of traditional culture and white-pillared mansions. In the wake of these earliest pioneers came other men of hardy ancestry to penetrate the central and eastern sectors, bringing with them skills and techniques to produce an overall balance for industrial potentiality.

The Spanish were the first to explore Mississippi. Within fifty years after discovery of the Americas, an expedition headed by Hernando de Soto established a base in northeast Mississippi after an arduous overland trek from its initial landing site on the shores of Tampa Bay, Florida. That was in 1540. By May of the next year De Soto had pushed onward to make the momentous discovery of the Mississippi River.

It was more than a century later that the French explorers, Marquette and Joliet, charted the true course of the river and disclosed that it did not run westward as believed in earliest tradition. Later, another Frenchman, Sieur de la Salle laid claim for France to all territory drained by the river; and a French post was established at Fort Maurepas near the present site of Biloxi with the purpose of engaging in trade in furs which were bountiful in those early days. After victory over the French in the Seven Years' War, the English gained title to the region and maintained possession from 1763 to 1779. Under English rule the territory became a prosperous agricultural community with activity centered on the growing of indigo and tobacco.

Taking advantage of England's involvement in the American Revolutionary War, Spain recognized the independence of the United States and seized the re-

Extensive Shipyard.

gion. This conquest, however, was never recognized by the United States and the two nations came near to armed hostilities over their conflicting claims. War was finally avoided by a settlement consummated in 1798 by which most of the land now embraced by Mississippi became United States territory. A governor was provided by Act of Congress and the section existed as a Territory until 1817 when it was admitted to the Union as the twentieth state, following the original Thirteen along with Vermont, admitted in 1791, Kentucky in 1792, Tennessee in 1796, Ohio in 1803, Louisiana in 1812 and Indiana in 1816.

Substantial growth and development had begun as soon as the region became a United States Territory and the first twenty years of statehood found this progress multiplied. Population was doubled, a public school system was gotten under way and farm lands were developed to a high stage of productivity. Population grew from 8,550 in 1800 to 40,352 in 1810 to 75,512 at birth of statehood. Of the new state's citizens, the census revealed that 45,085 were white; 30,061 slave and 356 free Negroes. In the next forty years population increased more than ten times. In 1860 there were 791,305 inhabitants in the state, and the last official census shows the number to have mounted to 2,183,796 persons in 1940.

In the early years of statehood substantial educational progress was recorded. Besides the institution of regular chartered public schools, Elizabeth Female Academy, a college for girls, was founded in 1819 at Washington. It is probable that this institution was the first college in America to graduate women. Hampstead Academy, now Mississippi College, was founded in 1826 at Clinton and in 1830 Oakland College was established at Rodney. Franklin Academy, the first public free school in the state has been in continuous operation ever since. Along with these institutions established after statehood should be included a territorial school that outdated all the others. Jefferson College, established by territorial legislation in 1802 began active work at Washington in 1811 and operates today as Jefferson Military Academy.

Statehood spurred economic development. Ever since the end of early Spanish domination subsistence farming had made steady growth. Encouraged by English rule, colonists had settled on the rich virgin lands and cultivated crops of corn, wheat, oats, rice, potatoes, flax, tobacco and indigo. This, however, was before the invention of the cotton gin and the perfection of spinning machines. By the time the province came under the control of the United States it had become bound to cotton. At first the fiber was grown on small plots but by the time of statehood the plantation system was well on its way to full development. In the midst of broad cotton acres a white-pillared mansion would be built in which the owner and his family would live. Nearby were the smaller homes of the croppers and also workshops where shoes, clothes,

Historic Lighthouse.

furniture, implements and other accessories were made. Some of the plantations were practically self-supporting. It was a profitable business and cotton became King.

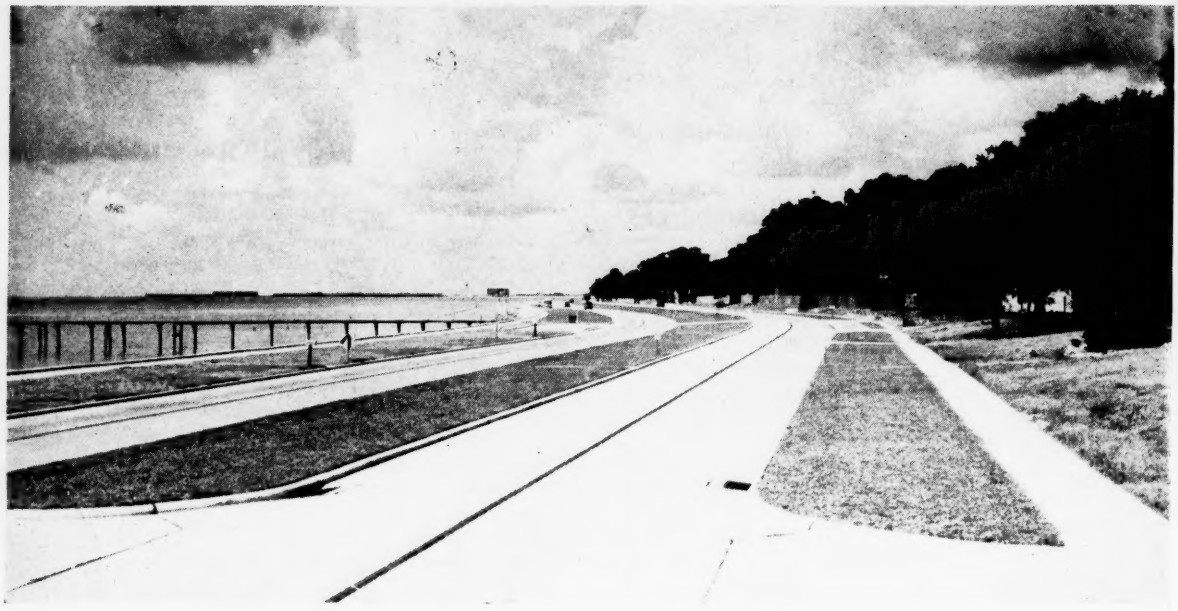
Climate, soil and topography were bulwarks of the kingdom. The climate is almost subtropical—the seaboard along the Gulf having a milder temperature and heavier rainfall than the northern sections. The mean annual temperature for the state is 64 degrees. On the coast it is 67; on the northern border, 61. The mean annual precipitation is 51 inches. For the southern portion it is 54 inches; for the north, 49. The soil of the greater part of the state is composed of black, brown, yellow or reddish loams and is generally very fertile. The surface ranges from level plains to low-lying hills. The maximum elevation of 780 feet above sea level is found in the northeast corner. The state falls into seven recognized and well defined sections:

The Delta section, fringing the east bank of the Mississippi River from the northern state border to Vicksburg and extending inland to the Yazoo River, is an alluvial plain or basin. It stretches about 200 miles from north to south and averages 65 miles in width. To the south is the Natchez district, with rich bluffs and bottomlands where crops of virgin luxuriance are produced. To the eastward of the Delta section, the Tennessee Hills section, with an average of 600 feet in elevation, fills the northeast corner of the state. Many ancient geological formations are to be noted here. Southward of this section lies the Black Prairie consisting of smoothly rolling earth, almost

Top—Tropical Trees.

Circle—Wild Life.

Below—Park at Meridian.



Gulf Coast Highway.

treeless but well grassed. The soil is black clay loam of high fertility. This section is bordered on the south by the Central Hills section, similar to the Tennessee Hills but of lower elevation; and from this region south to the Coastal Plain is found what is known as the Piney Woods—its soil a sandy loam.

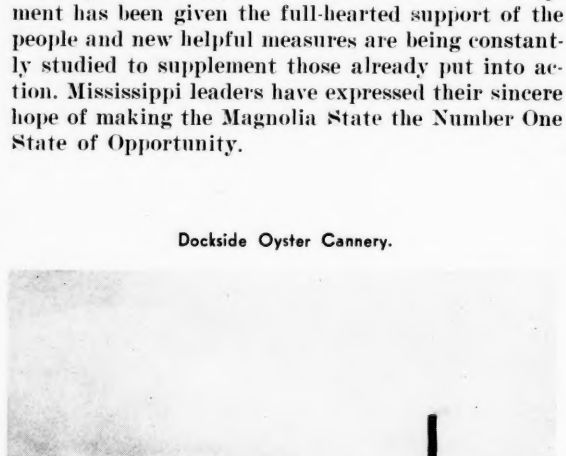
To understand Mississippi as it is, it is necessary to understand these geographical units for, though a part of the whole, each has its own sectional background. Although the distinctions are becoming gradually less sharply defined, it is the combination of the elements of all these sections that accounts for the versatility of Mississippi culture and makes the picture bright for agriculture and industry to climb side by side up the ladder of opportunity.

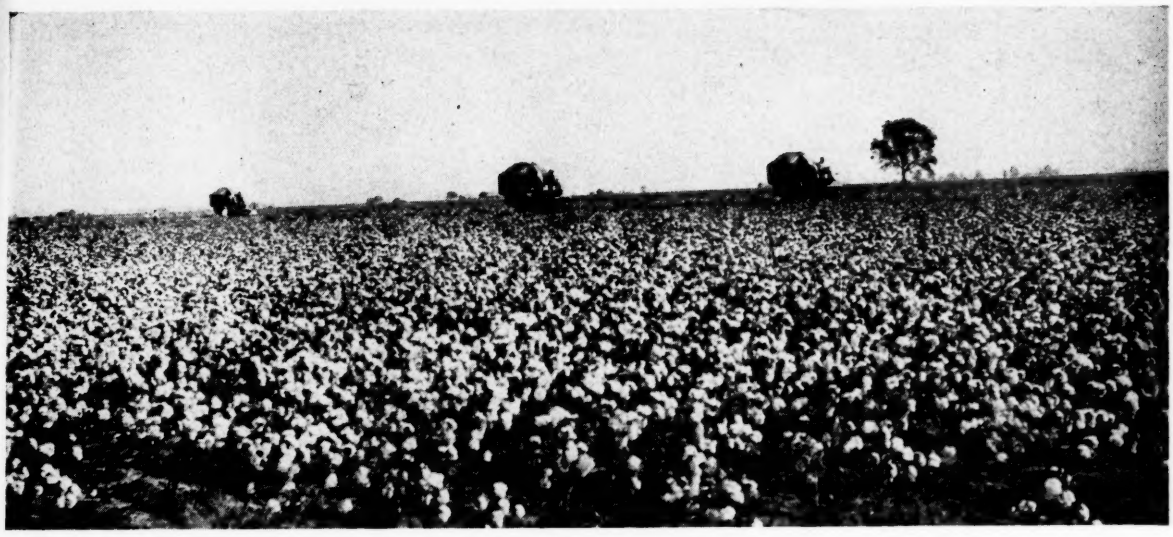
As a whole the state consists of a series of gently rolling prairies, low lying hills and fertile plains. It fringes, to the southward on the Gulf of Mexico from which it rises in gradual elevation northward to the hills contiguous with the Tennessee border. From south to north it extends for a distance of 330 miles while its maximum width from Alabama on the east to Arkansas and Louisiana on the west is 180 miles. In all it spreads over an area of 47,716 square miles.

The Delta section supplies an atmosphere of prosperous landed estates, energetic progress and marked activity; the Natchez region is a realm of graciousness and conventionality—a charming picture lifted from the frame of the past; the Tennessee Hills bristle with the fierce independence of hillbred farmers insistent upon retaining their traditional characteristics; the Black Prairie is dotted with dairies, mills and factories; the Central Hills typify cotton cropping and tenant farming on an extensive scale; Piney Woods is now a land of oil wells, diversified farms and reforested areas—a breeding ground of sturdy, resourceful men and women, somewhat in contrast with its neighboring region to the south, the Coastal Plain, which is recognized first and last as a region of pleasure resort.

It takes all the parts to make the whole; and it is a combination hard to surpass. Be they uplanders or lowlanders, croppers, artisans or industrialists, they are all Mississippians, of firm faith in the individual, determined to mold the destiny of their state. A series of progressive actions launched through a cooperative effort of industry, agriculture and government, seems destined to carry the state forward into a new era of progress. Legislation to advance full development has been given the full-hearted support of the people and new helpful measures are being constantly studied to supplement those already put into action. Mississippi leaders have expressed their sincere hope of making the Magnolia State the Number One State of Opportunity.

Dockside Oyster Cannery.





Mechanical Cotton Pickers in Action.

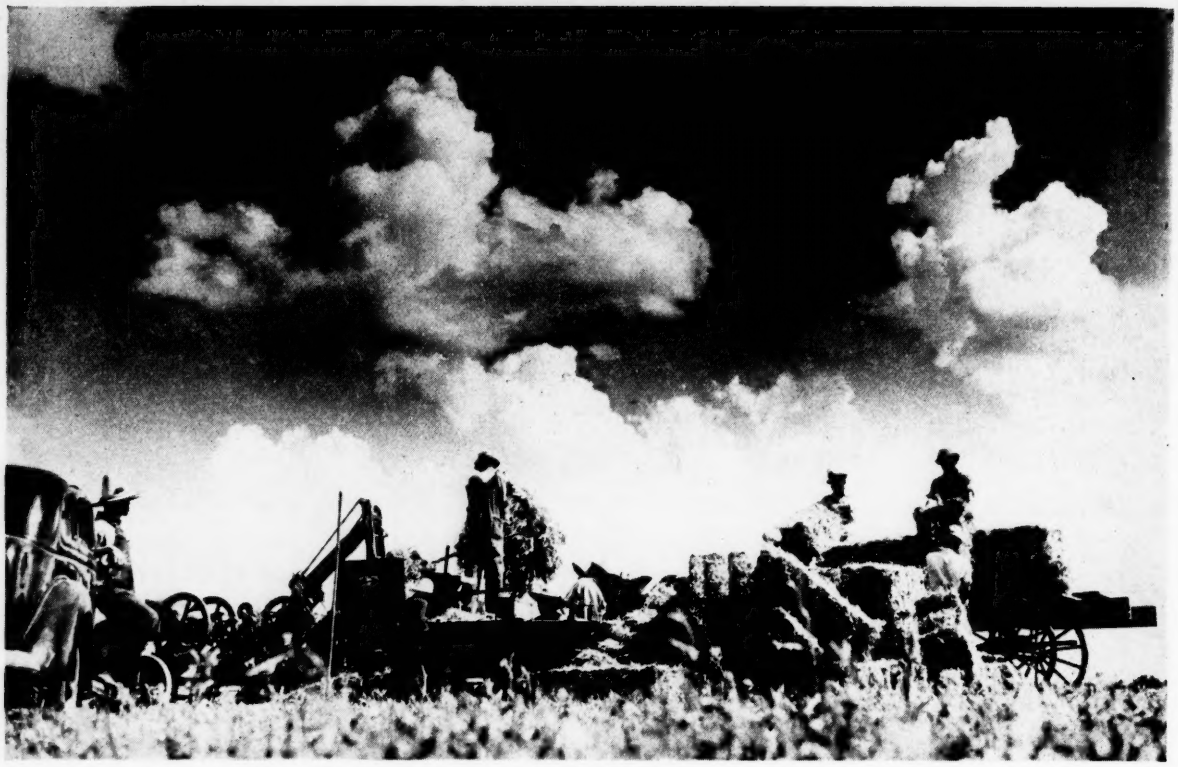
AGRICULTURE

There is a good reason for the fact that Mississippi is in large measure an agricultural state. Practically every kind of agricultural plant can be grown there. The great fertile section of the Delta, an empire within itself, is second to no other region of the world in richness of soil. More premium-staple cotton is harvested within that area than in any other known section of like size. Mississippi ranks second among the cotton-producing states, led only by Texas, a state more than five times its size. In average pre-acre lint yield, Mississippi leads all cotton states. In 1944, the average yield of cotton lint per acre was 411 pounds, a remarkable record when compared with the average per-acre yield for all cotton-producing states of less than 200 pounds. Mississippi, moreover, is one of the only two states (Texas being the other) to produce more than two million bales of cotton in any one season. This was accomplished in 1937, a peak year when 2,561,228 bales were turned out, and again in the season just passed during which 2,010,000 bales were harvested.

Important as it is however, cotton is not the only crop. Excellent production is achieved in corn, oats, wheat, sweet potatoes, Irish potatoes, forage plants, legumes of many varieties, sugar and sorghum cane and luxuriant commercial truck crops. Taking high rank, alongside of these, are livestock raising, dairying and poultry culture. Animal-raising is highly popular and profitable because the winters are short and mild and the long forage-growing seasons enable farmers to produce animals and their products at very reasonable cost.

Of the state's 30,348,800 land acres, 19,156,058 are adaptable to farming and stock raising. Of the total, 10,702,733 acres have been cleared and improved for agricultural use. Over three-fourths of these available farmlands, or 6,784,000 acres were utilized in 1944 to produce a record cash income. Crop sales totaled $282,488,000; livestock and livestock products brought in $76,979,000; government payments to farmers were $21,129,000; amounting to a combined cash income total of $380,596,000. Value of farmlands and buildings rose to $474,986,062, a gain of 10.2 per cent over the previous year when the nation as a whole was registering a gain of only 2.9 per cent.

Cotton was the largest cash crop with an income of $215,953,000 from lint alone. It is grown on an intensive scale in almost every county except those immediately contiguous to the Gulf Coast. Its supremacy is of long standing. Three technological developments during the early history of the state combined with fertility of the soil to usher in the reign of cotton soon after the turn of the Nineteenth Century. These were the perfection of spinning machines, the development of the cotton gin and the improvement of plant species through selection and standardization. The original seed of cotton grown in the United States is believed to have been obtained from the West Indies, probably the Island of Jamaica. It was a black seed the plant of which fell intermittent prey to a strange rot that sometimes destroyed half the crop. Many, if not the majority, of successful strains now under production throughout the cotton-growing states were first bred in Mississippi. The first recorded improvement in species was the introduction of seed cotton from Mexico in 1806. Amazing results followed the planting of this seed which was totally unlike the black variety previously used. The yield was extraordinarily large and the bolls were entirely free from rot. The fame of the new variety, called Petit Gulf for the plantation on which it was first



Harvest Time.

grown, spread immediately. With the introduction of the Petit Gulf strain the great cotton era began.

In addition to its income from cotton lint, Mississippi realized $34,846,000 in 1944 from cotton seed. Discovery of new uses has made cottonseed oil one of cotton's most important by-products. Used extensively in the manufacture of soaps, oleomargarine and cooking fats, it is highly recognized for food value in which it is ranked above lard and olive oil. Other products resulting from cotton seed include fertilizer, livestock feed, explosives and cellulose. The value added by manufacture brought cottonseed income to $52,230,000 with distribution of end products falling into 706,770 tons of crushed seed, 228,804,000 pounds of oil, 318,150 tons of cottonseed cake and meal, 158,483 tons of hulls and 204,547 bales of linters.

Cotton still is, and doubtless long will be, a major crop. Although crop diversification and intensified industrial development have become recognized as essential and are receiving increasing attention, it is unlikely that Mississippians will soon abandon the lucrative crop that for many decades has been a basic source of wealth. In the face of diversification that has substantially reduced cotton acreage in recent years, it is a tribute to its farm management that the total yield per acre and total cash income have shown steady improvement. Furthermore it appears evident from recent demonstrations that mechanization of cotton production is on the point of revolutionizing cotton's economic status.

Diversification of crops has been pursued in a number of directions. Marked increase in acreage has taken place in the production of corn, soybeans, forage crops, fruits, edible nuts, tung nuts and commercial truck crops.

Corn is the principal feed crop. In 1944, 2,638,000 acres were planted to corn with a resultant production of 42,224,000 bushels. Cash income realized, amounting to $3,205,000, represents only a fraction of the actual value, the largest part of the crop having been used on the farms as food and feed. In corn production, Mississippi holds several achievement records. One plot of 100 acres has produced over 10,000 bushels, and the all-time record from a single acre of 227 bushels is held by a Mississippi corn club boy. Extensive experiments are being conducted with corn hybrids to produce higher yields.

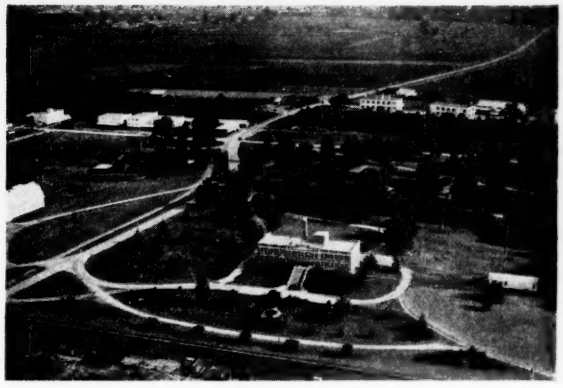
Tung Orchard.

In the past ten years there has been an increase in soybean production of over 1,000 per cent. In 1944, 435,000 acres were planted to produce a cash income of $1,560,000. First brought into the state as a cover crop to aid in soil conservation, soybeans are now finding wide use in industrial fields and have become a profitable crop from that standpoint alone. From a ton of soybeans are produced around 250 pounds of oil and 1,600 pounds of meal containing about 40 per cent protein. The oil is usable in making paints, linoleum, oilcloth and related products as well as foodstuffs such as margarine, mayonnaise and cooking oils. The meal is a valuable plastic ingredient.

Recent years have shown a decided increase in small grains and forage crops. Oats, in 1944, yielded 15,096,000 bushels from 408,000 acres with a cash income of $3,011,000. Clover is grown over practically the entire state. Alfalfa is grown in the northeast, central and Delta sections. Wheat has been introduced into the Delta section where it is used primarily as a feed and forage crop. Cash income from wheat in 1944 was $290,000 from 234,000 bushels, grown on 18,000 acres. Grain sorghums, most prevalent in the southern sections, are used principally for hay but in many rural areas are converted into molasses and syrup. Sagrain, a variety originated in Mississippi, is increasing in popularity with yields recorded of 80 bushels and over per acre.

Mississippi's tung oil "frontier" in Pearl River Country has made the state the pioneer and Number One producer of tung nuts. Within a radius of 35 miles of Picayune there are over 100,000 acres of tung orchards. In Pearl River County alone there are 78,000 acres, approximately half the total acreage of the United States. One of the most valuable of all vegetable oils, tung oil was imported, before the war, at the rate of 175,000,000 pounds annually from China's upper Yangtze Valley. Its principal uses are for making highgrade paints, wallboard, linoleum, cements, plastics, glycerin compounds and waterproofing agents.

Truck crops in Mississippi make a substantial contribution to the nation's market basket. Beans, cabbages, tomatoes, peppers, watermelons, cucumbers and other green grocer commodities roll northward each year by the thousands of carloads. In 1944 the truck crop belts shipped out $4,703,000 in food market products. Crystal Springs in Copiah County is today one of the largest tomato shipping points in the country. Some 20,000 acres of truck crops are grown annually in Copiah County alone. During the harvesting and shipping season thousands of persons are employed in the trucking belts where packing sheds and shipping centers are beehives of activity.



Delta Experiment Station.

Mississippi is known as the home of the paper-shell pecan and is the Number Two state in pecan production. The 1945 crop is expected to approximate 7,830,000 pounds. The annual average over the past ten years stands at 5,920,000 pounds. Wild pecan trees grow in various parts of the state but most of the cultivated acreage is concentrated in the Piney Woods and Coastal Plain areas. Peanuts also constitute an important crop. Acreage planted to this crop increased during the war from 27,000 in 1941 to over 70,000 in 1944. Production in 1944 was approximately 35,000,000 pounds.

Fruit orchards are plentiful in Mississippi but thus far the commercial possibilities of their output have

Mississippi is noted for outstanding herds.

not been fully developed. Peaches, pears and figs are grown in abundance and while they are used chiefly for home consumption, substantial incomes were realized in 1944—$1,833,000 for peaches and $362,000 for pears. All the necessary requirements of soil and climate are present for a flourishing fresh fruit commerce.

Giving support to crops and orchards, and taking over many thousands of acres released by cotton, livestock raising including dairying has come to assume a position of major rank. Beef cattle production in particular is demonstrating almost unlimited possibilities, the significance of which is appealing more and more strongly to farmers. The extent to which wartime economy has brought home to farm families the importance of beef-producing enterprise is seen in the increase in value and number of cattle on farms during the war years. In 1940, 1,273,000 head of cattle were counted and appraised for a value of $29,162,000; latest reports for 1944 disclose these figures to have grown to 1,518,000 head, worth $56,544,000 and further revealing improvement in quality of breeds as well as increase in numbers.

Along with interest in cattle raising has come expansion of dairying. This activity, however, had its beginning long before the war made these products doubly essential. Growth of the dairy industry has been phenomenal for the past two decades. Today, Mississippi is noted for its outstanding herds. Good breeding plus careful calf selection has greatly improved the quality of these herds and brought recognition from beyond the state's borders. Each year the demand grows stronger for breeder and replacement stock produced in the herds of this state. More than 20,000 head are shipped out each year for breeding and foundation stock. By the end of 1944, Mississippi had 603,000 milch cows and heifers, worth $31,959,000.

Sweet Potatoes—500 bushels to the acre.

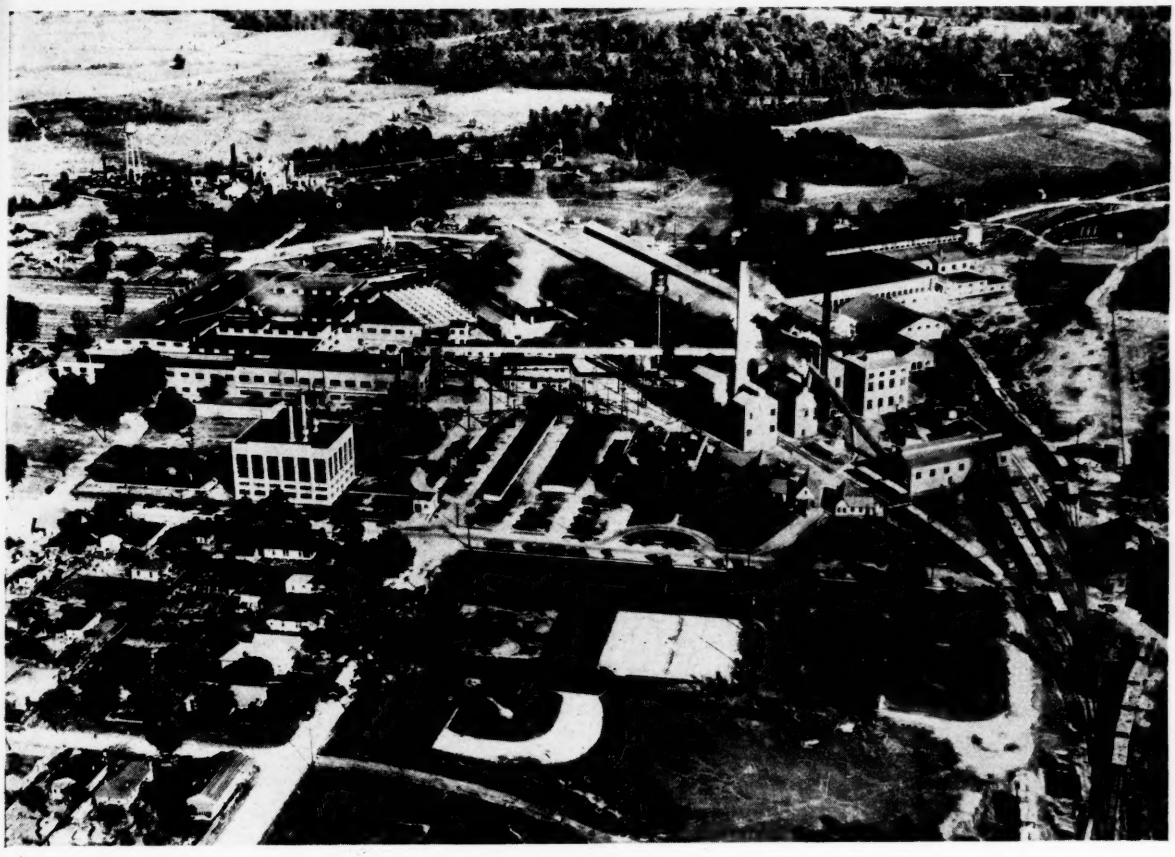
Development of animal raising is not limited to cattle. Interest in other livestock began many years ago. From 1910 to 1920 Mississippi had a larger increase in hogs than did Iowa. By the end of 1944, the estimated value of swine on farms was $13,215,000 and cash income from hogs and pigs was substantially the same amount. Swine population was 1,054,000 head. Census of other livestock disclosed; sheep, 67,000 head valued at $272,000; mules, 346,000 valued at $45,328,000 and horses, 116,000 valued at $9,823,000. The greatest rise in hog production has been in the Delta. Between 1930 and 1940 there was a 66 per cent increase in the hog census in that section. The hill sections, Black Prairies, Piney Woods and upper portion of the Coastal Plain also registered substantial gains. In many communities hogs are kept mainly to raise meat for home consumption but each year farmers are fattening more and more of these animals for marketing. Of sheep, the greatest concentration is in the lower Coastal Plain. There they are raised by range method and maintained chiefly for wool production. Because of the hardy nature of these flocks, many ewes from this region are sold to producers farther north for foundation stock. Before the nineteen thirties, livestock was sold primarily to local meat markets; but in recent years a rapidly developing market system has resulted in series of auctions that cover almost the entire state. More than forty of these markets, widely dispersed, are a great aid to farmers in profitable disposal of their livestock.

Substantial increases are being recorded in cash income from poultry and eggs. In 1944 this income amounted to $22,534,000, inclusive of chickens, ducks, geese, guineas and turkeys. At the beginning of 1944 the poultry census showed 10,126,000 chickens and 66,000 turkeys; and it is estimated that spring propagation increased this population by not less than 50 per cent. Eggs are produced generally throughout the state, with heaviest output probably being in Lee and surrounding counties. Poultrymen are building up breeds for higher egg production and larger egg size.

Agricultural research is being carried on intensively at the Agricultural Experiment Station in Starksville. Here are conducted experiments which have general application over the entire state. Studies are made in agricultural economics, agricultural engineering, agronomy, animal husbandry, bacteriology, chemistry, dairying, entomology, home economics, poultry, horticulture and plant pathology. Here also is coordinated the work of various branch stations and departments. This official action is but one example of progressive moves made in recent years to advance Mississippi's position as an agricultural treasurehouse.

Branch stations have been located at strategic points. The Holly Springs station works out problems pertaining to products of North Mississippi. The Poplarville station conducts experiments useful in the Coastal Plain section and neighboring areas. There is a station at Crystal Springs seeking to further production and commercial development of fresh fruits and vegetables. A station at Raymond specializes in tests for soil fertility and crop rotation. The Natchez station exists primarily for study of livestock problems. Supplementing the activities of the experiment stations, a number of state boards and committee cooperate in research and scientific development. These include the Plant Board, Livestock Sanitary Board, Board of Veterinary Examiners, Soil Conservation Committee, and Seed Improvement Committee.

Farmer organizations contribute no small part toward technological and scientific advancement. The Farm Bureau Federation, Federated Cooperatives, Farm Security Administration, Farmers Union and the youthful organizations, Future Farmers and 4H Clubs all play important roles in the objective of integrating Mississippi's advantages of unsurpassed soil and bountiful sunshine and rainfall.



Pressed Wood Board Plant.

MANUFACTURING

More and more it is being recognized that Mississippi affords many advantages for manufacturing and distributing enterprises. Especially is this true in respect to labor conditions. The experience of industries now operating in the state disclose a minimum of difficulty in manning and managing operations. One prominent firm, recently established, writes in regard to the opening of its plant and the employment of a working force that is 100 per cent Mississippian:

"These men more than surprised us. They adapted themselves to our work in short order and really took an interest in their work. They all seem to have the right attitude and are willing to learn and work with the management 100 per cent. The majority of the men we hired when we arrived and started operation are still with us. We think a lot of them and feel that they think a lot of us. We cannot speak too highly of the attitude of Southern labor from our experience."

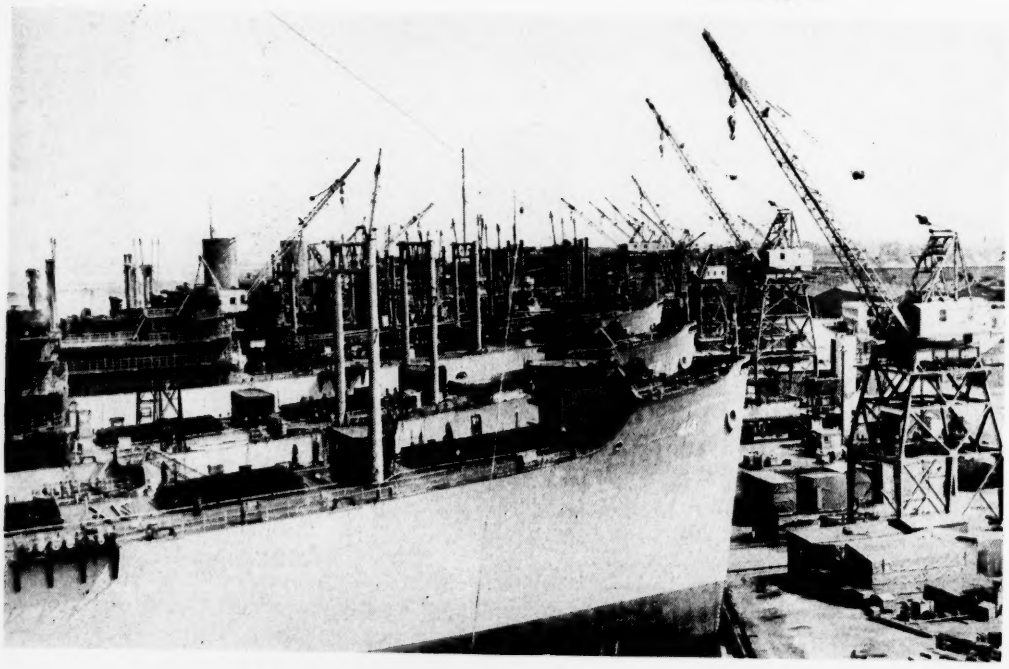
Population available for plant employment is largely rural, being distributed over the state at a rate of 46 inhabitants per square mile, but it is thereby more readily available to new business regardless of chosen location, and the practice originated in Lee County of bringing in factory workers from rural districts in buses has been adopted almost universally throughout the state with successful results.

It is an added advantage that the state is in the very heart of one of the richest raw materials sections of the nation. Agricultural, fibrous and chemurgical products, timber, minerals, fuels—all are available in abundant supply and variety from nearby sources. Transportation facilities are excellent. Living conditions are ideal. These advantages are paying dividends. Facts and figures show that the financial and industrial growth of Mississippi along with the entire South during the past ten years has been far more rapid than that of other sections. The forces that have achieved this advancement, moreover, are really still in their initial stages with greater intensification planned for the future.

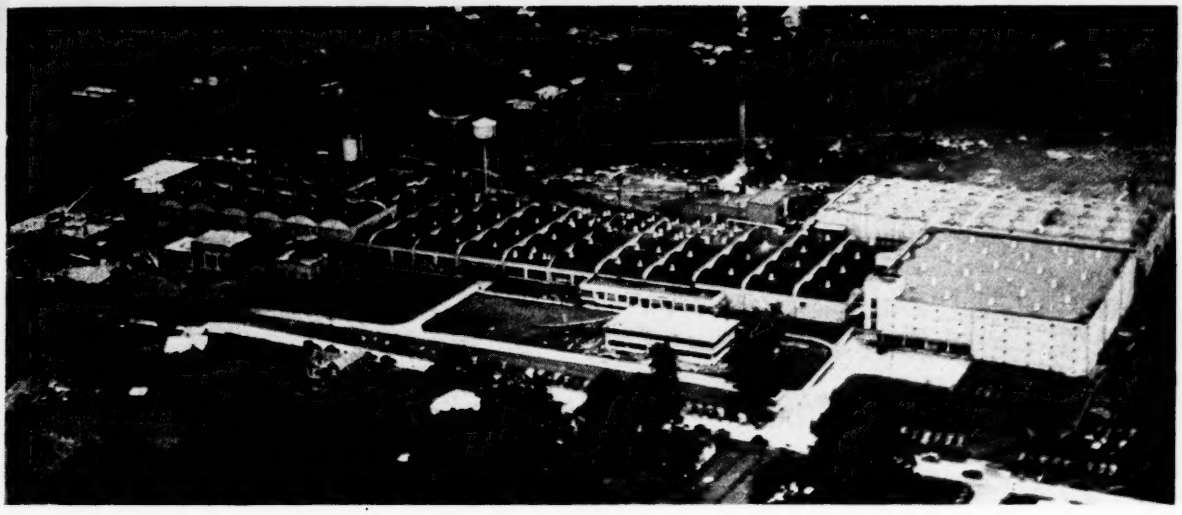
Today there are 2,550 industrial plants operating in the state, their production including rubber tires, glass, ships, wood products of many kinds, tung oil, cottonseed oil, brick, potato starch, textiles, fluorescent lamps, chemicals, petroleum products, sea foods, canned vegetables, furniture, machinery, transportation equipment, hardwood distillates, naval stores,

Above—Shirt Factory.

Below—Shipyard.



Below—Desk Manufacture.



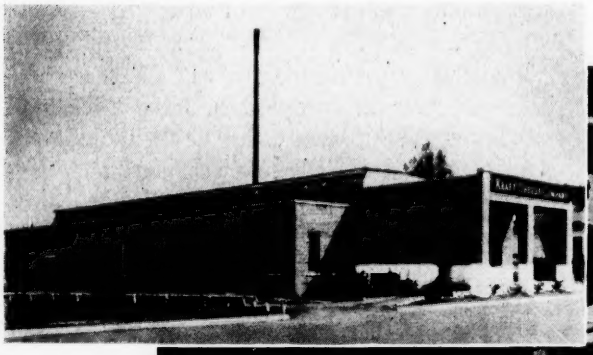
Tire and Tube Plant.

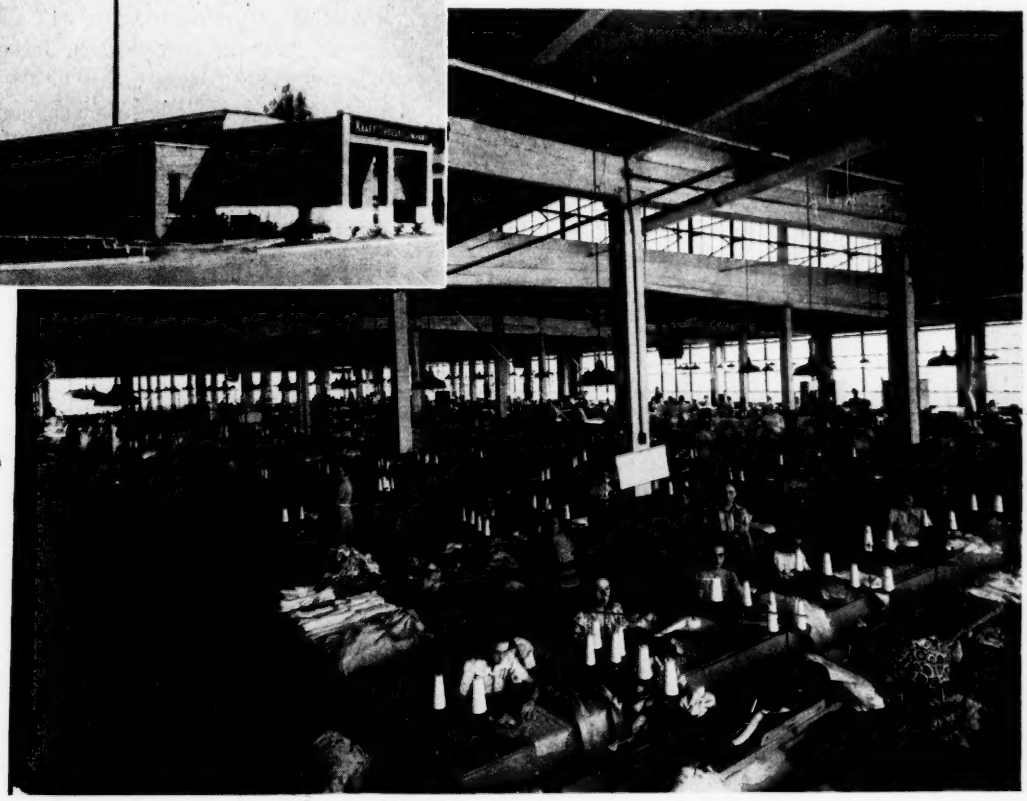
fertilizers, iron and steel products, stone and clay products, vegetable oils, meat and dairy products and a number of others. These industries in 1944 required 596,264,000 kilowatt-hours of electrical energy. Cotton mills had 130,500 spindles in active service and these averaged 446 hours spinning time per spindle per month. Looms in operation numbered 3,806.

Payrolls subject to social security taxes totaled $195,387,700 for the fiscal year ending June 30, 1945, a gain of 5.7 per cent over the previous fiscal year. The latest official report of the value of all manufactured products was that of 1944 showing a total of $383,876,507. A number of new industries have been established in the state since that time.

Important among the enterprises of the state is the sea food industry. The packing and cannning of shellfish along the Gulf Coast has been an important industry for decades. Over twenty canning plants and

Left—Cheese Plant. Below—Overall Factory.





Fertilizer Plant.

a greater number of shipping establishments provide steady employment for thousands of fishermen and factory workers with annual payrolls running in excess of $3 million. During a normal year, over 60,000 cases of raw oysters and 175,000 cases of canned shrimp are shipped out. The claim is made by Biloxi that it is the largest shellfish packing center in the United States.

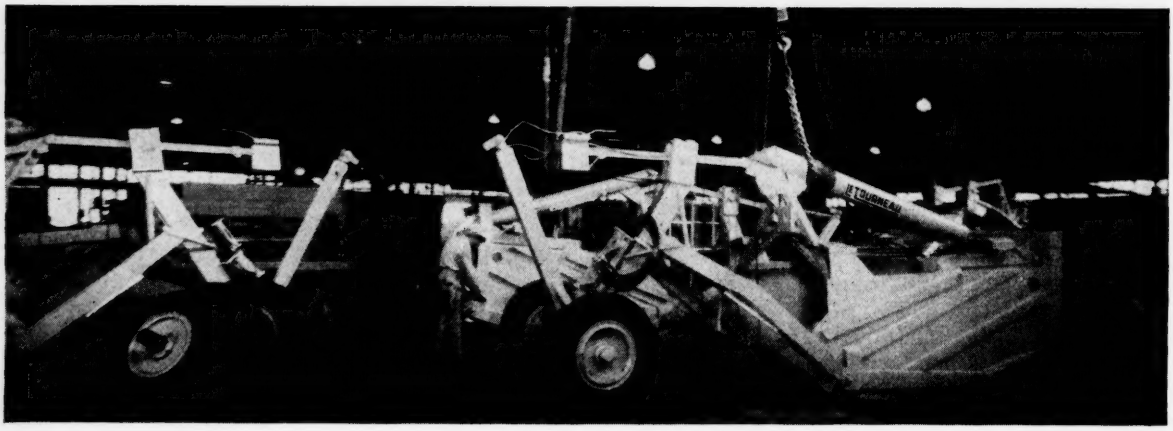
Mississippi's share of war contracts has served to whet the determination of its industrial leaders and citizenship to foster more than ever conditions that will attract more new and useful enterprises. War contracts totaled $462,895,000 and included $6,121,000 for aircraft and aircraft accessories; $313,363,000 for shipbuilding and ship repair; $53,007,000 for ordnance—guns, ammunition, military equipment and supplies; and $90,404,000 for miscellaneous supplies such as foods and textiles. Investment in new facilities for wartime manufacturing and processing totaled $249,114,000.

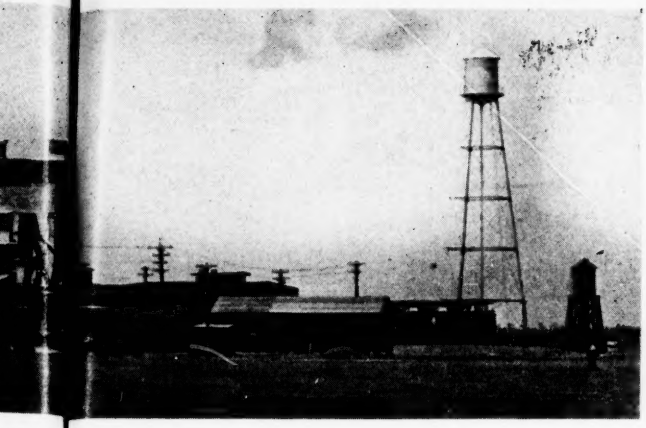
Bolstering the determination to foster new enterprise, the Mississippi Agricultural and Industrial Board, created at the 1944 legislative session, has projected a two-pronged campaign that has as its objects: (1) To disseminate additional information to Mississippians themselves regarding the resources of their state and the value of enterprise-building for utilizing these resources. This campaign works through the press, radio and through bulletins sent out from organization headquarters. (2) A national advertising campaign involving space in five national publications to inform the business world of the advantages Mississippi has for new enterprise. Coupled with these aggressive moves to amalgamate the mutual interests of investing capital and prospective communities, a "Plan of Action for Community Development" has been devised to round out the program.

That the campaign is bearing fruit and that capital is viewing the state with favor is evidenced by the many studies that are now being made with a view to locating new factories in almost every region.

Industrial progress during the past decade has been impressive. For the year 1943 the value of manufactured products compared with that of 1933 showed a 500 per cent increase. The number of factory wage earners increased over 200 per cent and payrolls rose over 600 per cent. This expansion apparently is still under way and becoming more intense. From July 1, 1943 to October 1, 1944, no fewer than 108 foreign corporations qualified to do business in the state with average capitalization of $4,590,550. During the same

Construction Machinery Manufacture.





Floor Boards for Truck Bodies.

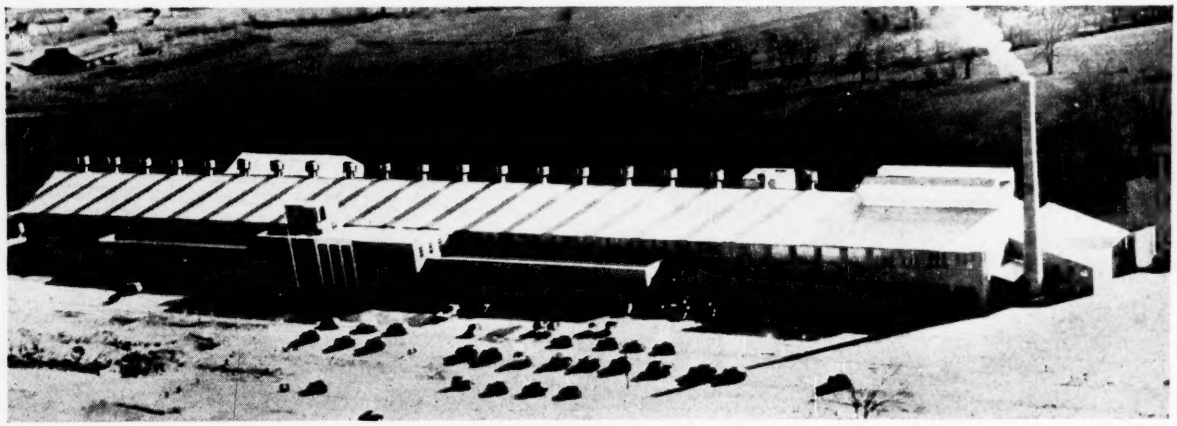
period 214 domestic charters were granted with average capitalization of $78,497. Forty-two of the charters were issued to firms directly connected with the oil industry. Mississippi's total business volume, including commercial enterprise, increased over 150 per cent from 1934 to 1943 and the gain during the first seven months of 1944 was 11.8 per cent over the same period of the previous year. Per capita buying income increased 151 per cent from 1939 through 1943 while the gain for the nation as a whole for that period was 101 per cent.

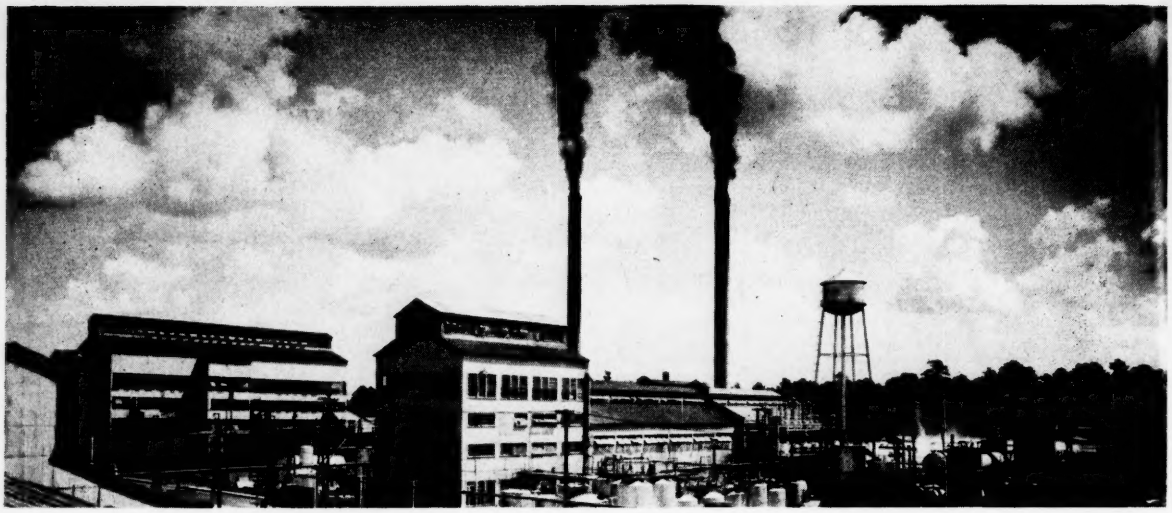
No estimate of Mississippi business conditions would be complete without some analysis of the structure and results of its now widely-heralded BAWI plan (Balance Agriculture with Industry). Here is an adventure in state-fostered industrial development that has attracted widespread attention. Since it aims, as its name implies, to bring manufacturing enterprise into balance with agricultural economy, its final outcome is likely to be watched with interest by the entire South and other sections where agricultural production exceeds manufacturing. Briefly stated, the plan consists in raising through local bond issues community capital with which to buy land and erect buildings to house prospective manufacturing operations. Rent is practically free to the occupant provided a specified payroll is maintained, and taxes are eliminated for five years.

Under the plan, twelve representative industries were brought into the state prior to 1945. One was a shipbuilding concern that at present employs several thousand workers. Four were silk hosiery plants employing in the aggregate around 2,000 persons. Three of the plants manufacture shirts and together employ about 1,000 workers. The others include a rubber tire factory employing nearly 1,000; a woolen sweater factory with about the same payroll; a chenille bedspread plant employing up to 500; and a plywood, auto-accessory plant with about 250 employees. Over a four and a half year period these twelve firms paid a total of $43,539,300 in wages.

Reports from the Agricultural and Industrial Board headquarters indicate that other new busi-

Fluorescent Light Plant.





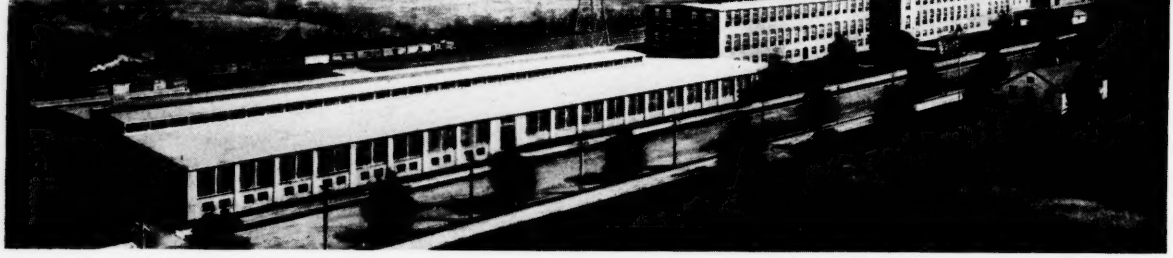
Powder Plant.

Below—Work Clothing Factory.

ness has been brought in during 1945 and that activity is marked throughout the state. The October, 1945 report lists the following activities for Mississippi cities and towns: Batesville—bonds approved for $60,000 building for hosiery mill; Philadelphia—bonds approved for $80,000 building for glove factory; Houlka and vicinity—$75,000 building for garment plant; Tippah County—$100,000 for garment plant; Calhoun County—$60,000 for clothing factory; Louisville—$225,000 for automotive upholstery factory; Drew—$100,000 for dress factory. At Amory work has been started on a new building to house a clothing manufactory. At Laurel an Illinois machine-shop operation specializing in work for the oil industry has taken up location. At Columbus the construction of a plant for cottonseed delinting operation is under way. At Jackson a brick and tile plant with production capacity of 650,000 brick per month is nearing completion.

It is generally agreed that industrial relationship between community, capital and labor enjoys a co-operative atmosphere under BAWI procedure. Industrial growth under BAWI sponsorship has been at a far higher rate than before the plan became effective. How much these results stem entirely from the plan itself, how much from the effect of the stimulus its educational features inculcate into community attitude is probably a question not yet answered. The one thing that appears certain is that the urge for industrial expansion has become firmly fixed in the public mind and seems destined to go forward unchecked. It is evident that local capital, investing in home industries, is adding to the attraction which the state's opportunities present to outside investors.

Textile Plant.



PETROLEUM

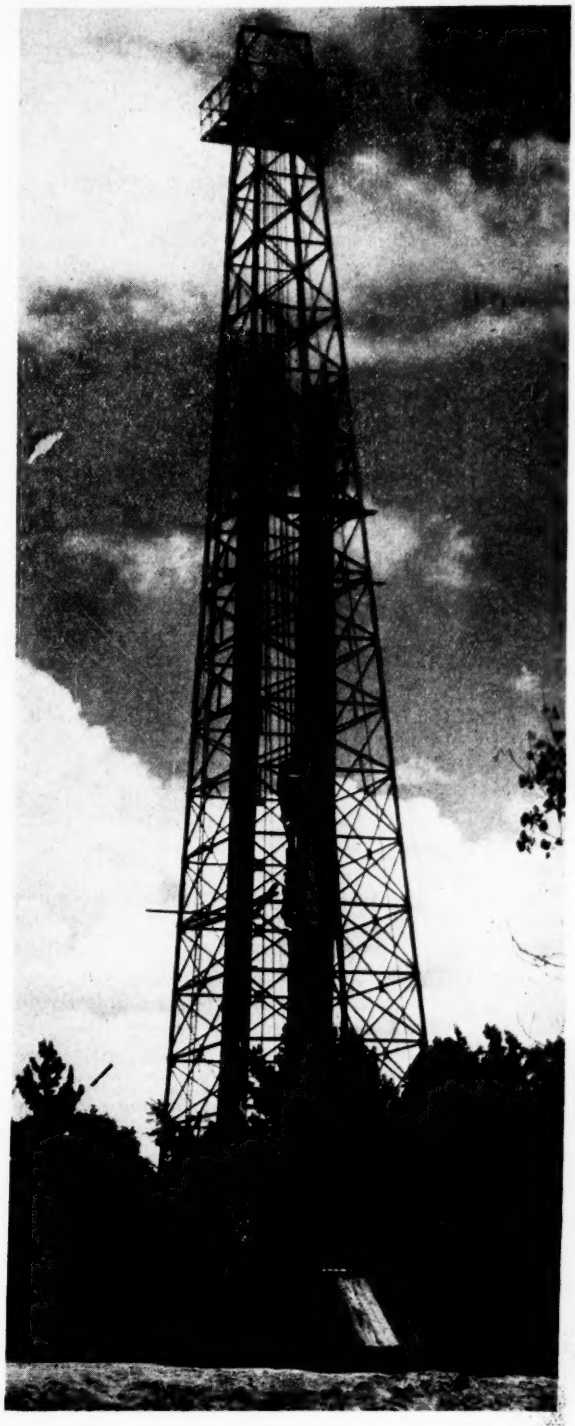
The oil and gas industry of Mississippi is assuming a more and more important role in the economy of the state. The reserves of oil and gas are at an all-time peak and it is the belief of eminent geologists that the future of oil and gas development in the state is to be of first magnitude.

Before setting out the reserve figures for oil and gas, the present price of natural gas in Mississippi should be dwelt upon because of its interest to the manufacturer. The last figures available are those of the United States Bureau of Mines for the year 1942. These disclose that the price, for large industrial loads, is approximately fifteen cents per thousand cubic feet and for smaller commercial uses, thirty-seven cents per thousand cubic feet. Natural gas at fifteen cents per thousand cubic feet is the approximate equivalent of a good grade of coal at three dollars per ton.

Remembering that oil was discovered in the state only a little over six years ago—September 5, 1939; natural gas in October 1936; also that approximately thirty-five wildcat wells are drilling in widely scattered areas; and that the reserve estimates were made by petroleum engineers who took into account only the area actually in production, the reserve figures take on added meaning. According to these petroleum engineers' estimates, as of January 1, 1946, a total of 668 wells have proven 50,333 acres productive of oil and gas and under this acreage there is recoverable by the present producing methods over 197 million barrels of oil and condensate and over 857 billion cubic feet of natural gas. The engineers have also estimated that there has been produced within the state, up to January 1, 1946, over 102 million barrels of oil and condensate and over 129 billion cubic feet of natural gas. This oil and condensate ranges in gravity from a low of 16 degrees API to a high of 67 degrees API, and sells according to its gravity at from 80 cents to $1.40 per barrel. In other words, there is being uncovered in Mississippi liquid hydrocarbon reserves that are suitable for a wide variety of uses, ranging from the manufacture of asphalt to production of the finest high octane gasoline.

The presence of facilities for the movement of natural gas to the various cities and towns of the state is demonstrated by the fact that every town with a population of over ten thousand people is served with this fuel. Over 98 per cent of the towns between five and ten thousand in population have natural gas distributing facilities served by major trunk lines. This same fact applies to 60 per cent of the towns with population between 2,500 and 5,000 people; and to 24 per cent of the towns with 1,000 to 2,500 people.

Mississippi is able to show the prospective manufacturer performance records on every oil and gas field in the state. The supervisor of the State Oil and Gas Board has worked closely with the Petroleum Engineering Committee of the industry and through



Oil Well.

him the prospective manufacturer can be advised of the necessary basic technical engineering and geological data so imperative in the present day operation and long range study of oil and gas fields.

There is now one oil refinery in full operation in the state; another is nearing completion and others

are reported in the prospective stage. The plant under construction is located near the Heidelberg field in Jasper County and will be of approximately the same capacity as the plant now operating at Crupp, construction of which was started in January 1941 and completed the following July. The original capacity of the plant was 2,500 barrels per day but this has been increased and now stands at 3,500 barrels per day. The plant was designed to run on crude oil from the Tinsley field and is served by its own pipe line. The refinery produces a long line of products including Ethyl gasoline, regular gasoline, special naphthas, tractor fuels, kerosene, Diesel fuel, boiler fuels, asphalts, which include RC and MC cutback, asphaltic cement, crack filler and roofing asphalt in solid form, packed in both fiber and steel containers.

Since the plant began operation it has refined approximately four million barrels of crude oil, all of which was produced in Mississippi. It has refined approximately 169,000 gallons of gasoline, kerosene, tractor fuel and Diesel fuel. The refinery furnishes employment for about 100 persons and has, invested in refining plant and equipment, about $750,000.

The state legislature, in session this month, is expected to give intelligent attention to the needs of the oil and gas industry and to deal with any phases of the industry which may require legislative action. It is interesting to note that Mississippi has already given evidence of official policy relating to oil and gas designed to be attractive to the prospective manufacturer. This policy was given approval by Governor Thomas L. Bailey on September 14, 1945 in a letter to Attorney General Greek L. Rice. Among the points set forth in this policy are these:

The oil and gas business should remain in the hands of private industry, using its own capital. The public interest can best be served by a vigorous, competitive industry guided by private initiative.

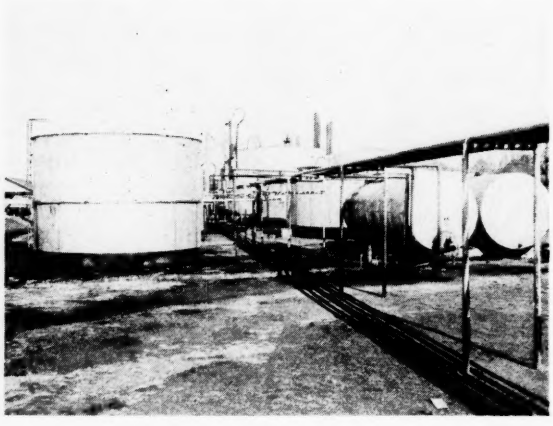
The problems of conservation and waste of oil and gas are primarily industry problems; regulations for achieving conservation and preventing waste are matters of exclusive state jurisdiction.

It is a function of the Federal Government under the Constitution to regulate interstate commerce. Federal agencies should not assert jurisdiction over oil and gas operations within the state that do not relate directly to interstate commerce. Similarly, the state should not attempt to interfere with interstate commerce.

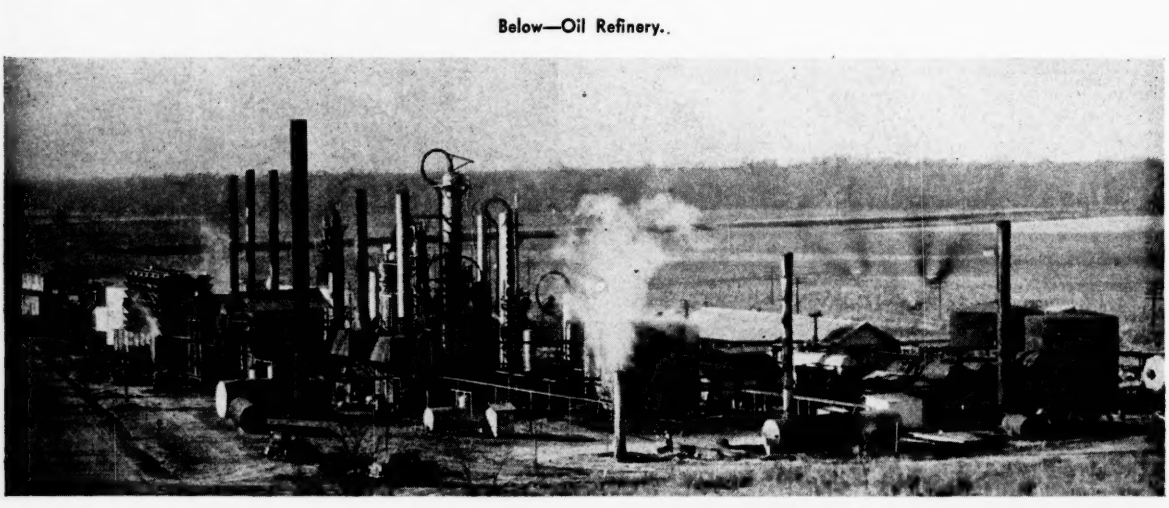
The ultimate or end use of natural gas should not be regulated, because competition is the best arbiter. No group has the foresight to determine what is the best use of gas. Efforts to interfere with commercial decisions and to set up artificial standards and barriers will be subject to influence by special groups intent upon special advantage. Furthermore, if the state and Federal governments enter upon this field of regulation, the ultimate logical end will be a managed economy. This whole field is best left to the determinations set up by relative prices in a free competitive economy.

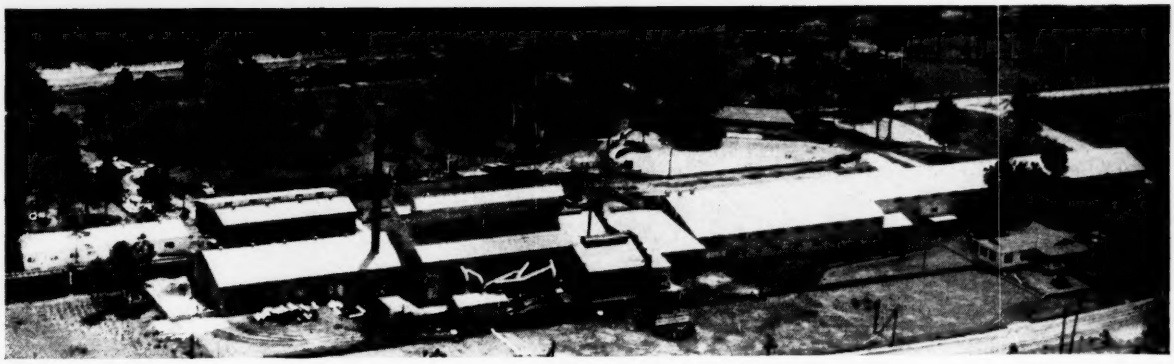
It is believed that the public welfare, the rights of consumers and the interest of the oil and gas industry will be furthered by the adoption of the foregoing principles as a state policy, with the jurisdiction, functions and the duties of the state and federal governments clearly defined.

Oil Storage Tanks.



Below—Oil Refinery.





Glass Bottle Plant.

MINERALS

Along with the black fluid gold of petroleum resting beneath Mississippi's treasure of fertile soil, lie valuable stores of non-metallic minerals. Production of all these combined in 1941 was valued at $17,750,726 —more than three times greater than that of 1931; and it is estimated by geologists that the output from these deposits should be twenty times the present annual average.

Among the vitally important of these non-metallic minerals is the bauxite deposit in Winston County which is said to be one of the three most valuable of such deposits in the world. Since some of the most important aluminum plants of the nation are located in the South, this deposit is strategically situated for supplying their raw material needs.

Clays suitable for common clay products are widely distributed. It is claimed that almost every county has clays suitable for brick and tile making, and clays are available in abundance in several counties suitable for stoneware, face brick, electrical fixtures and fillers for paper and paint. In addition to the bodies of clay now being worked, there are, in several parts of the state, enormous but inactive deposits of varying type and quality. Surveys are being currently made to ascertain their usefulness. One of these is in the Delta region. There, the blue mud which has been deposited through the centuries in the ox-bow lakes of that region, is reported to have a water content as high as 60 per cent in some of the samples taken for analysis. Because of this unusually high natural water content coupled with great plasticity and fineness of grain, it is held likely that commercial applications will be found practicable.

Other minerals having known deposits of a size and quality adequate for commercial production are abundant. Fuller's earth, valuable as a filtering agent for oils of all kinds, is found in large deposits in Winston, Clarke, Lauderdale and Newton counties. Red and yellow ochres exist in substantial quantities and are being produced in Tishomingo County which also has an important output of paint rocks, used as are the ochres in pigment preparations, building stone, umber, asphalt and tripolite, the last being important as a scouring abrasive. Building stone is

Gypsum Products Plant.

abundant in Hinds, Rankin, Franklin, Jefferson and Claiborne counties. Silica for glass and enamel abounds in Winston County; navaculite in Tippah and Benton counties; gypsum in Smith and Jasper counties; lignite in Winston and neighboring counties; and copperas in Smith County. Commercial mineral water exists almost throughout the state; and sand, gravel and chert in nearly every county outside the Delta section. Bentonite, used as a filtering agent, and soap and cosmetic filler is prevalent in the south-central part of the state and limestone suitable for fertilizer or building stone is well distributed throughout most sections.

While Mississippi has no iron deposits comparable with those of its sister state to the east, important scattered beds of ore of commercial grade hold promise for the future and occur in two forms. Both kinds, a carbonate variety and brown oxide ore, are most extensive in Marshall, Benton, Lafayette, Calhoun and Webster where they exist in thin beds or lens-shaped deposits interspersed with gray or lignite clays. Analyses of numerous samples afford an approximate average of 50 per cent metallic iron for the brown ores and 55 to 60 per cent for the carbonate ores after roasting. They are remarkably free from the impurities of a sulphur or phosphorous nature. In the development of known deposits, no underground mining would be necessary, the ores being readily available by strip-mining methods. Limestone for fluxing is available within 20 miles of the ore and the Alabama coal fields make fuel freely accessible.

Forestry Lookout Tower.

FORESTS

Log Caravan at Big Lumber Mill.

Mississippi is among the leading timber states of the nation and forest products have always constituted one of its major sources of wealth. When white men first began to settle the region it was covered almost entirely by vast forests. Gradually much of the better farmlands were cleared of timber but even today great stretches of virgin hard and softwoods remain, and second-growth trees have replaced many of those removed for commercial use. Of the total area of 30,348,800 acres, no less than 15,869,000 are in woodland and of these, 15,860,000 are estimated to be wooded with timber of commercial value. Of the woodland acres, about 7,750,000 are owned by manufacturing interests; 2,777,325 are contained in national forests; and the remainder, approximately 6,000,000 acres, are owned by farmers.

The total saw-timber area consists of around 8,325,000 acres, one-fourth of which is wooded with old growth timber, and three-fourths with second growth. Translated into commercial measurements this acreage consists of 16,910,000,000 board feet of softwoods—3,160,000,000 old growth and 13,750,000,000 second growth; and of 19,025,000,000 board feet of hardwoods—6,800,000,000 old growth and 12,225,000,000 second growth; making a total of 35,935,000,000 board feet of saw timber.

Timberland is well distributed throughout the state and in many sections both hard and softwood varieties are to be found in the same areas. Hardwoods, however, predominate in the Delta section and softwoods are more prevalent in the south central and southern sections. The northeast and central sections are characterized by both upland hardwoods and short-leaf loblolly pine, about equally divided as to quantity.

In annual cut of all hardwoods combined, Mississippi led the nation in 1943 with 604,030,000 board feet. It was also first in cut of red gum and tupelo. It was seventh in softwood cut, with 1,029,974,000 board feet, and sixth in total cut of all kinds of timber with 1,634,004,000 board feet. Hardwood cut was distributed among: Ash, 6,949,000 board feet sold at an average market price of $38.24 per thousand; basswood, 949,000 b.f. at $48.64; beech, 15,340,000 b.f. at $39.64; birch, 154,000 b.f. at $39.42; chestnut, 22,000 b.f. at $31.44; cottonwood, 21,718,000 b.f. at $34.27; elm, 12,462,000 b.f. at $36.49; red gum, 190,432,000 b.f. at $35.91; tupelo, 61,343,000 b.f. at $37.60; hickory, 7,871,000 b.f. at $93.30; maple, 5,311,000 b.f. at $42.89; oak, 199,670 b.f. at $39.03; sycamore, 7,316,000 b.f. at $34.28; walnut, 30,000 b.f. at $80.13; yellow poplar, 34,555,000 b.f. at $39.11; and other hardwood varieties, 39,908,000 board feet. Softwoods were divided between cypress, 14,865,000 b.f. at $42.13 and yellow pine, 1,015,109,000 b.f. at $34.72.

In addition to the log-cut for lumber production, timber was furnished in 1943 for the manufacture of 4,715,000 laths, 115,000 squares of shingles. To these should be added substantial cuts for pulpwood, fuel wood, poles, piling, posts and railroad ties.

Commercial lumbering was well under way in Mississippi by 1880 and when the forests in northern states began to show signs of depletion soon after that time, large lumber companies started their move southward. Since the turn of the century lumbering has been a major industry in Mississippi, and today ranks near the top along with agriculture and petroleum. Climate has been an important factor in perpetuating forests as a basic source of wealth. Because of the long growing seasons and ample moisture it is possible to grow 200 board feet of new timber per acre per year. Before the war new growth was keeping well ahead of annual cut. In 1942, the annual cut of 2,671,000,000 board feet of all kinds of timber was more than offset by an annual growth estimated at 2,900,000,000 board feet. With annual production no greater now than then, and with no reason apparent for a lessened growth, it is fair to assume that approximately the same relationship is being maintained between cut and new growth.

Mississippi has long been a leader in adopting measures to preserve its forests. The State Forestry

Commission, created by legislative act in 1926, plays an important part in balancing depletion with new growth. Its duties are to study forests from a scientific viewpoint, make programs and recommend the best methods for using existing timber and for replenishing cut-over woodlands. A substantial portion of its effort is directed toward educating farmers in the value of scientific timber cropping procedure. Other responsibilities include anti-fire measures and seedling distribution. A total of 27,211,593 seedlings were planted during the two years ending June 30, 1943, the bulk of which were provided by the 70-acre state forest nursery.

In the all-important objective of keeping fire hazard at a minimum, the State Commission is aided by the United States Forest Service. In cooperation with each other, the two organizations construct and maintain fire lanes, telephone lines and fire towers. Pamphlets and bulletins are distributed with information on the prevention and fighting of forest fires and on the results of controlled and uncontrolled small-growth burning. Other bulletins give data on timber utilization methods and explain the benefits that timber affords for grazing and eroded lands.

In addition to the state and national forest services, the Extension Service and Soil Conservation Service contribute valuable work. The Extension Service works with the State Forest and Park Service in disseminating forest conservation information. It assists in conducting annual district and county ranger schools at which instruction is given on selective cutting and timber management practice. It also holds training schools for 4-H Clubs, Future Farmers and other interested groups. The Soil Conservation Service places stress on the need of good forestry in the preservation of land values. Demonstrations are given by this agency for each farm woodland owner in conservation districts who wishes it.

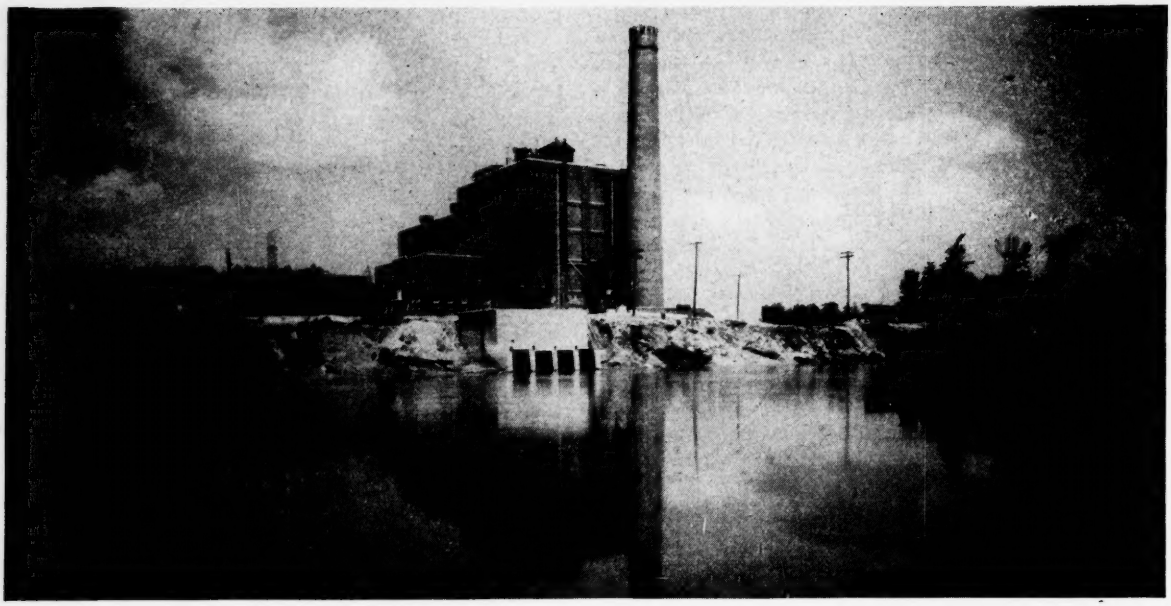
Augmenting voluntary contributions to the conservation of forests, the State Legislature has placed certain statutory limitations on the cutting of timber. Under the minimum cutting law, no pine tree may be cut that measures less than ten inches in diameter unless there be left, unfaced and untapped, 100 trees four inches or more in diameter on each acre of forest land being cropped, or at least four seed trees of ten inch or up diameter. The statute further provides that at least six hardwood trees of ten inches or more in diameter or 100 trees of at least four inch diameter must be left standing on each acre harvested. Timberland owners are not required to pay any standing-timber tax except the land ad valorem tax. When timber is cut for commercial purposes, three per cent of the value is then collected.

In connection with forest conservation the national forests program was inaugurated in 1928. Through legislation enacted by the state, the federal government was permitted to buy certain state lands for watershed protection and forest development. Sites selected for the purpose now embrace five national forests totaling nearly three million acres. Holly Springs forest, in the northern sector consists of 122,996 acres of mixed pine and hardwoods. Bienville, in the central sector, is largely shortleaf and loblolly pine. It contains 175,438 acres. The Delta Unit, in the section from which it derives its name, comprises 58,961 acres of bottomland with an abundance of oaks, gums, ash and other hardwoods. As yet it has not been given full national forest status. Homochitto, in the southwest, with 189,027 acres, has a good timber stand of loblolly, shortleaf and longleaf pine. De Soto, 14 miles from the Gulf Coast, made up of 427,704 acres, has longleaf and slash pine as its principal timber. For all of these units protections and improvement systems have been planned with roads, fire-breaks, telephone lines, lookout towers and guard stations strategically located. The work laid out for them envisions the replanting of cut-over areas and the thinning and development of existing stands.

Lumbering Operation.

With private ownership and public agencies working hand in hand, the state appears well along the road of perpetuating for its future use and pleasure this great natural resource which has meant so much to it in the past.

Loblolly Timber.



Power Plant.

POWER

Industrial enterprise has access to an abundant supply of low cost, dependable power in Mississippi. Such power is available either in the form of electric energy from a network of interconnected transmission lines which crisscross the state or through the natural gas pipelines and other retail outlets.

Electricity is distributed throughout the western half of the state by Mississippi Power & Light Company, in the southeastern part by Mississippi Power Company and in the northeast by municipally owned systems, served in the main by the Tennessee Valley Authority. In addition to these facilities, 23 rural electric cooperatives have many miles of lines throughout the state. Steam plants fueled by natural gas and hydro-electric installations share in the generation of the power supply.

Transmission systems of the major generating plants are interconnected and the overall development of power facilities is maintained in adequate amount to assure at all times an ample supply of reasonably priced electric power for commercial and industrial development.

The state's largest and newest generating station at Plant Eaton on the Leaf River east of Hattiesburg is presently being equipped with its second 22,500-kilowatt generating unit and corresponding boiler installation. This plant placed in operation in March, 1945, was erected and equipped at a cost of $1,602,083, with approximately $700,000 scheduled to be spent on it for further expansion.

Increased emphasis is being placed on the extension of electric service to farm and rural areas. Constructive programs have already brought electricity to thousands of new rural and farm customers and additional projects are being pushed vigorously. With Mississippi's agricultural products promising a sound foundation for new processing enterprises, the rural electrification program will be of constantly increasing importance in the future.

Supplementing electric power, five natural gas pipelines cross the state and each has numerous retail outlets distributed through practically all sections, offering an abundant source of low cost fuel for establishments that prefer to generate their own power and for commercial and residential heating purposes.

Mississippi gave a practical demonstration of its power-supplying ability during the war when numerous military installations, war plants and large essential industries were furnished constantly available and dependable power which played a significant part in the nation's outstanding war production and service record.

Privately Financed Electrification.

TRANSPORTATION

Streamlined Train.

Mississippi's transportation facilities play a vital role in its expanding industrial economy. Intensive activity in recent years has brought about a dramatic transition from conditions of earlier days.

The first immigrants had three choices of approach. They could come by sea, landing at seaports on the Gulf Coast or at settlements along the river. They could float down the Ohio and Mississippi. Or they could trek overland from colonies in the north and east, carrying their possessions on pack horses and following Indian trails. All three routes, modernized and improved, still exist and have been joined by the more modern systems of railways and airways.

In 1803, almost immediately after acquisition of Mississippi territory from Spain, the United States government made treaties with the Indian nations to build roads through their lands. One of the results of these agreements was the historic Natchez Trace—at first no more than a narrow trail extending from Nashville to Natchez—which is now being restored and modernized by the combined governments of the United States, Mississippi, Alabama and Tennessee. It winds past noted inns, mansions, forts and battlefields. When finished, the national highway-parkway following its course will consist of 314 miles through Mississippi, 33 miles through northwest Alabama and 101 miles from the Tennessee border to Nashville.

Next to be improved after the roads of the region was the river traffic. Flatboats and houseboats made room for steamers. In 1811 the steamboat, New Orleans, steamed down the waterways from Pittsburgh to the city for which it was named, and thereafter made regular round-trips along with other vessels of its kind that were swiftly put into service. Today state and federal governments spend millions yearly to keep the river channel open for heavy vessels that ply from the Gulf to the Great Lakes. Advancement arrived also on the high seas. In 1833 there was great excitement in the town of Natchez when a ship direct from Liverpool, England landed at the wharf, and soon after left with a load of cotton for its home port. A short time afterward regular steamer service was established between Natchez and New York City.

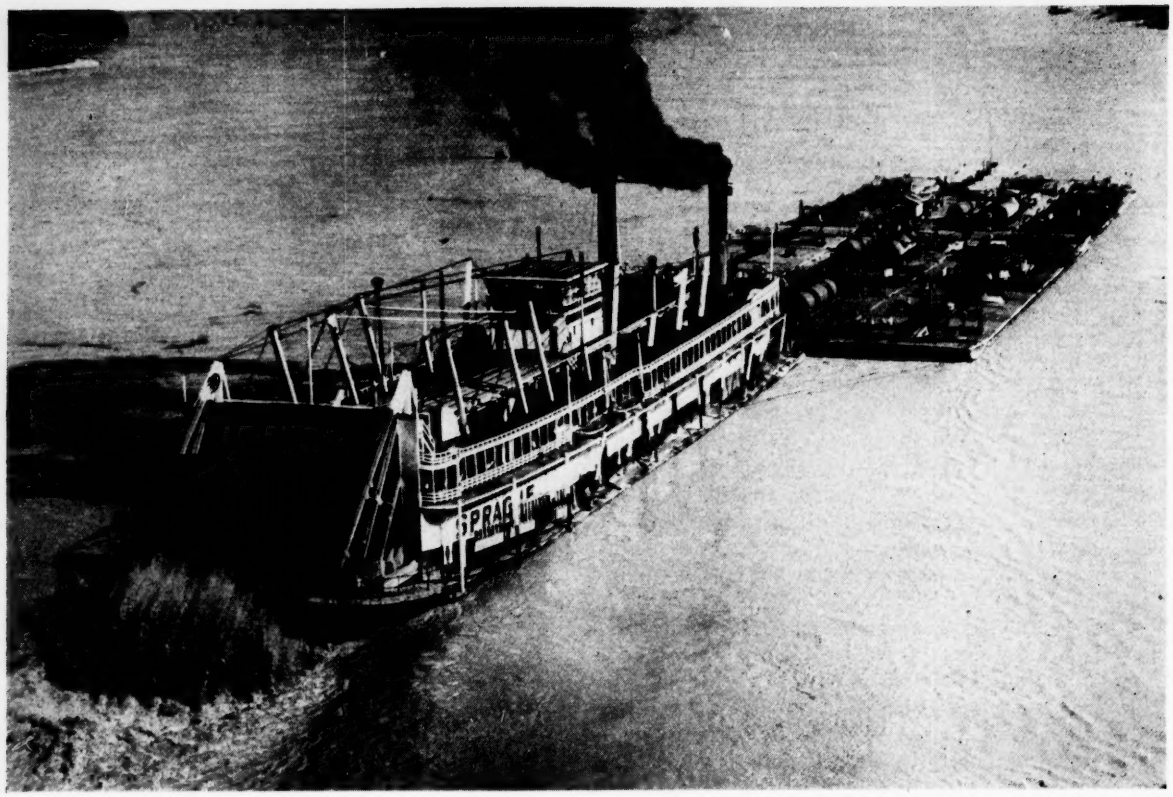
Events were flowing swiftly in those days. It was also in the eighteen thirties that a mighty rival challenged the waterway carriers for the transportation of Mississippi goods. The first railroad of the state and the third of the nation came into existence. Extending, however, only for the short distance of 27 miles, from Woodville to Bayou Sara on the banks of the river, this first railroad helped rather than rivaled river traffic for over it cotton and other products were transported for loading onto boats bound for New Orleans, New York or points up the river.

Today the bulk of traffic is carried by railroads of which the state is so abundantly supplied that each of the eighty-two counties has at least one rail line within its borders. Six major systems and two independent lines network the state with 3,947 miles of trackage. Major systems are the Illinois Central, St. Louis and San Francisco, Louisville and Nashville, Southern Railway, Gulf Mobile and Northern and Mobile and Ohio, the last two recently merged. Shorter lines are the Columbus and Greenville and Mississippi Central lines. Smaller roads and branches bring the total number to 22 and these in 1944 handled their greatest volume of traffic of all time.

In Gulfport and Pascagoula, Mississippi has two seaports. The one at Gulfport is recognized as one of the best export-import harbors in the South. Its basin is 26 feet deep and is connected directly with the Gulf of Mexico by a dredged channel through Mississippi Sound at Ship Island. Modern piers provide adequate and economical handling and accessible proximity to the open gulf effects savings up to 24 hours of dock time as compared to competitive ports.

Principal exports are cotton and cotton products, lumber, asphalt, fertilizer, cooperage stock, cottonseed cake, naval stores and the numerous other products indigenous to the fertile soil of the lower Mississippi Valley. Over three million pounds of sugar, among other important foreign products, are imported annually.

Realizing that the Gulf Coast is to become more im-



Mississippi River Tow.

portant than ever as a gateway to Central and South America, other cities along the Mississippi River are making surveys with a view to new or improved port facilities. Encouraged by Congressional action authorizing construction of a 12-foot channel from Cape Girardeau, Missouri to Baton Rouge, Louisiana which will permit boats of deep draft to ply this great waterway, Greenville is proposing an expansion program for its port facilities. Vicksburg and Natchez are planning similar activity. At Pascagoula, local leaders aided by shipbuilding interests are making plans for a deepwater harbor and port facilities.

Ably supporting waterway and railway traffic, motor carriers, both passenger and freight, operate through the state to serve directly an area covering fifteen states. These carriers have direct service to Chicago, Houston, Birmingham, New Orleans and Oklahoma City with excellent connections at those points for complete national coverage. These interstate carriers are fed by numerous intrastate lines which also furnish adequate local service between all the communities of the state.

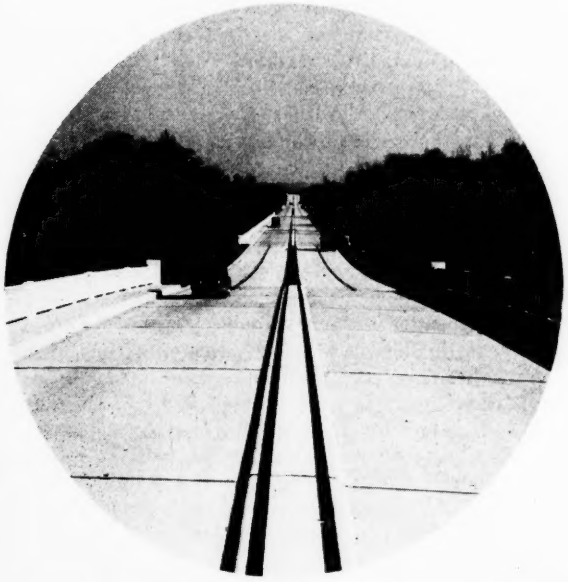
Enabling these trucks and busses, as well as its nearly 300,000 other motor vehicles to operate conveniently and economically, Mississippi now has a fine highway system. Today this mileage consists of 3,334 miles of the highest type of hardsurfaced roads, a large portion of the materials of which came from local deposits thereby sharply reducing construction costs. Even so, the system represents an expenditure of $110,000,000 by the state government alone, exclusive of huge amounts contributed by the federal government. In addition to these major arteries, there are over 61,000 miles of secondary highways and streets. This secondary road system, said to be the second largest in the nation, is especially useful in affording farm to market, or farm to shipping point, transportation.

Port on the Gulf.

Airport at Jackson.

With modern bridges spanning the Mississippi River at Natchez, Greenville and Vicksburg, a total of seven major highways afford routes across the state for transcontinental travel. U. S. Highway 51 runs north and south, down the center, for the entire length of the state. U. S. Highway 61 parallels this course by following the east bank of the Mississippi River from the north to south borders, passing through the historic Delta section. U. S. Highway 45 follows the north-south course near the eastern border. Intersecting these are U. S. Highways 80, 82 and 90. Highway 80 runs east-west, bisecting Highway 45 at Meridian, Highway 51 at Jackson and Highway 61 at Vicksburg. Highway 82 runs east-west near the northern top from Columbus to Greenville where it joins the bridge across the river. Highway 90 skirts the entire Gulf Coast Section. The seventh artery, U. S. Highway 49 runs from the northwest corner into the southeast, passing through the Delta section, oil field section, state capital and intersecting with Highway 90 at the coastline. One of the last states to launch an all-out road construction program, Mississippi has apparently profited by the mistakes and achievements of other states with the result that it now boasts a highway system that is receiving widespread commendation.

A Mississippi Highway.

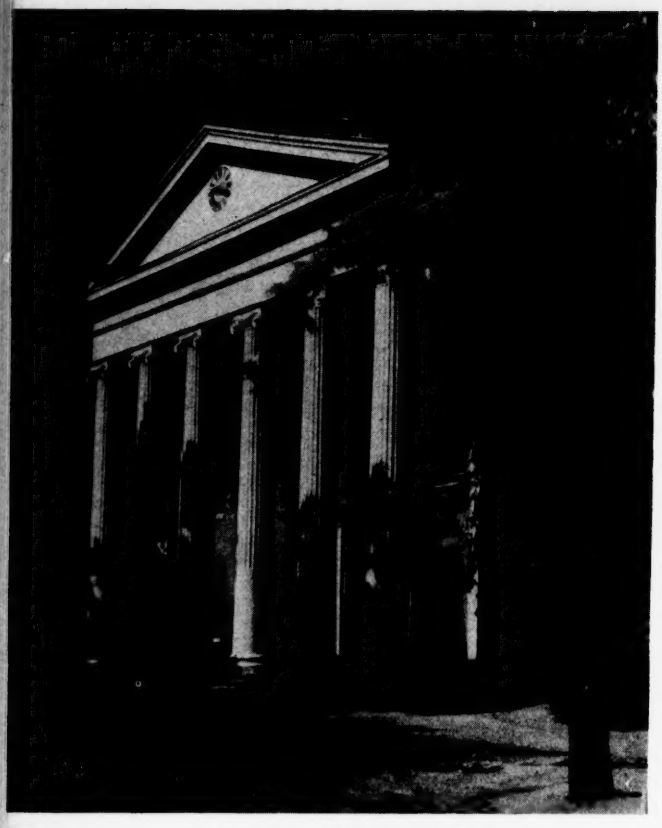


Looking a bit into the future it also appears likely that this system is soon to be augmented by a probably more important highway link than any yet constructed. When completed at a cost of many millions of dollars, some of them already spent, the 448-mile Natchez Trace is expected to become a link in the proposed Pan-American Highway destined to unite three Americas, north, central and south. Under the plans adopted the National Park Service in conjunction with the U. S. Bureau of Roads will make all historical surveys possible, construct the national parkway motor road and eventually restore all historic buildings and land marks.

Civilian airway traffic, being resumed now after severe wartime curtailment, rounds out the state's transportation system. Both east-west and north-south transcontinental airway transportation is available, with not less than 32 designated landing airports. Numerous flights are made daily in all directions and mail, passengers and express are handled with dispatch. In addition to the longer routes, applications have been filed for five intrastate airlines proposing to serve practically every community in the state.

Below—Mississippi River Bridge.

EDUCATION



Lyceum at University of Mississippi.

Mississippi has pioneered in early educational facilities. Jefferson Military College, a school for young men, chartered in 1802 during territorial days, was the first school established in the Old Southwest. Elizabeth Female Academy, established in 1819, was perhaps the first school in the nation authorized by legislative charter to confer degrees upon women. Each of these institutions was located at Washington, the first capital of Mississippi.

In 1884 Mississippi Industrial Institute and College, now Mississippi State College for Women, was established at Columbus and was the first state-supported college for women in the nation. Mississippi was the first state to set up an agricultural and mechanical college for Negro students and the first to create institutions for the blind, deaf and dumb.

In addition to these firsts of outstanding importance, pioneering progress has been exemplified in the fields of vocational education, pupil transportation and consolidation of schools. During the three-year period ending June 30, 1943, no fewer than 42,666 persons were accorded training to qualify them for service in war plants as skilled operatives. The problems of widespread pupil distribution has been overcome by transporting at public expense more pupils in proportion to white population than in any other state. An average of 118,000 pupils are carried daily to and from school. Legislation for consolidation of schools began in 1910 when there were 4,256 rural schools operating for white children alone. Twenty years later this number had been reduced by 2,306 but attendance had increased.

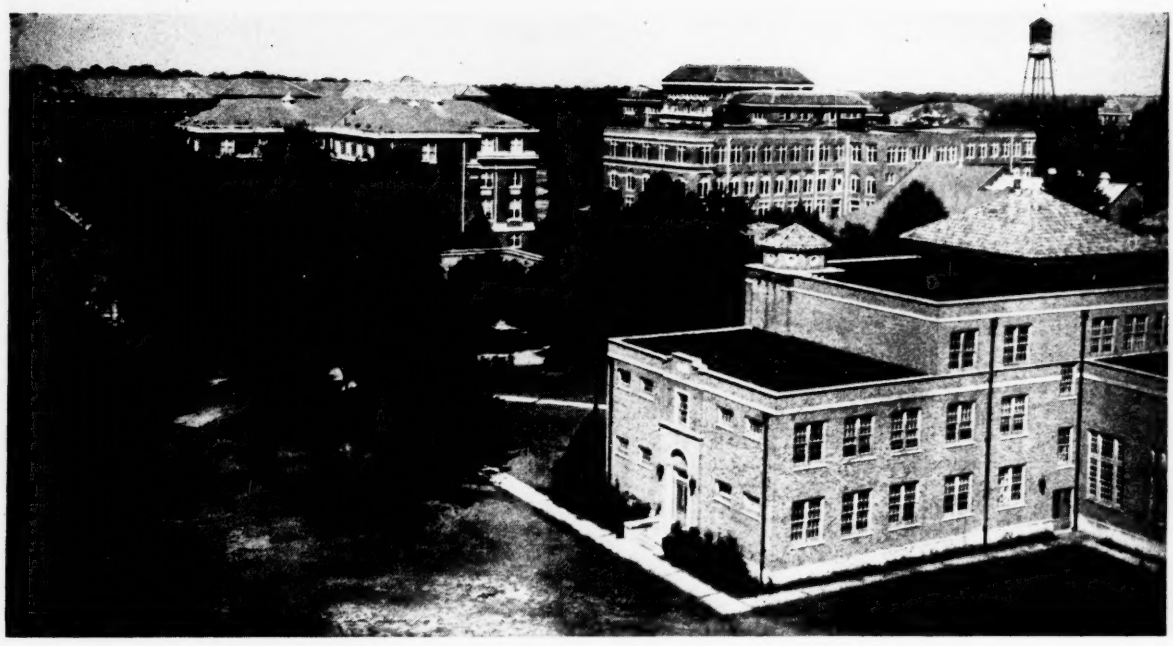
In 1910, also was begun the development of county agricultural schools, with subsequent expansion of the system to the point where these schools became so well distributed as to cover the entire state. Many of these schools have gained accredited high school standing, giving rural children all the educational advantages enjoyed by those of urban districts. A great number of these schools have been absorbed into county educational programs. In 1915, a system of double consolidation was inaugurated through which the principles of consolidated schools and those of vocational agriculture were combined. It has been estimated that this plan cut personnel costs by as much as 80 per cent and at the same time extended facilities to eight times as many students. Prominent among results accomplished are examples at Crystal Springs and Cleveland where the largest consolidated schools in the world are now in existence. The school at Crystal Springs, as last reported, had an enrollment of 1,457 drawn from a district embracing 116 square miles. Cleveland's school had enrollment of 1,098 of whom 463 were transported by bus.

Mississippi as a whole has 1,319 white elementary schools with 5,603 teachers; 3,737 negro schools; 21 county agricultural high schools; 18 junior colleges; nine senior colleges and universities; and 5,000 school busses that transport 154,000 pupils 96,889 miles each day. Enrollment in 1942 totaled 593,428. Of these, 57,160 were enrolled in vocational courses.

Vocational courses constitute part of the regular educational program in public high schools. Vocational rehabilitation is also provided for crippled persons over 16 years of age and under 21. These courses are in four fields; agriculture, home economics, trade and industrial training and distributive education. The State Vocational Board, in cooperation with five state colleges, maintains departments for training vocational teachers, both white and Negro.

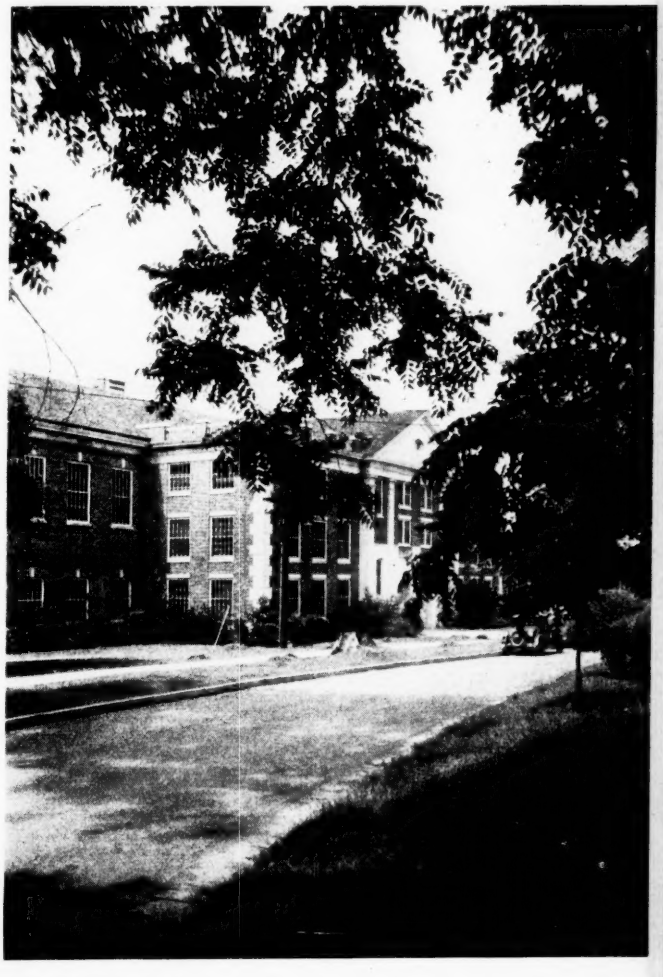
Of the county agricultural high schools, a number are run in connection with the public junior colleges. Others are operated for Negro students. These institutions have played an important part in training over 137,000 persons in farm machinery repair, machinery repair, machine-shop work and food production and processing. Over 400 rural schools, in all, have been available for this type of training, and in many of these, special shops have been set up to implement instruction.

The public junior college system was established to further the opportunities of rural boys and girls whose incomes were not sufficient to enable them to attend a senior college. These institutions were de-



Above—Mississippi State College.

Below—Gymnasium, "Ole Miss."



veloped by a system of zoning designed to bring every boy and girl within easy traveling distance of one of the schools. This practical method of allocation makes possible two years of college training to the masses of rural youth, at a minimum cost, close to home. The cost per student for room, board and fees averages $160 per nine-month session and any worthy student has the opportunity to work out all or a major part of this sum. The teachers in these schools are specially trained to study student needs and vocational aptitudes and to maintain on campus and in classroom an atmosphere conducive to personal development.

Of the universities and colleges, seven are state supported. Oldest of these, University of Mississippi at Oxford received its charter in 1844. Begun as a liberal arts college with supplementary law department, it has expanded until it now offers all courses in the usual university curriculum. Mississippi State college, Starkville, was chartered under the name of Mississippi Agriculture and Mechanical College in 1878. Later, courses in liberal arts, science, education, business and pre-medicine were added. In 1930 it was made coeducational and in 1932 its name was changed. The largest college cafeteria in the United States is located at State College. This cafeteria is 360 feet long and 350 feet wide. It seats 1,020 students at one time and the annual food budget runs around $150,000.

Mississippi State College for Women at Columbus, was opened in 1885 and offers courses in the liberal arts, secretarial and other specializing departments. Mississippi Southern College, Hattiesburg, was first incorporated as Mississippi Normal College by legislative act in 1910. In 1922, legislative authority was granted for bestowal of bachelor of science degrees and in 1934, for bachelor of music degrees. The name was changed to Mississippi State Teachers College in

Military Academy.

1924 and to Mississippi Southern in 1940. Delta State Teachers College, Cleveland, was established by legislative act in 1924. It now confers the degree of Bachelor of Science in Education and has supplementary courses in music and art.

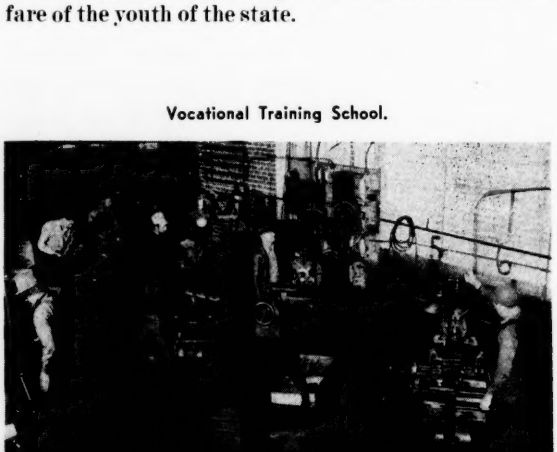
Alcorn Agricultural and Mechanical College for Negroes, forerunner of such institutions in America, was established in 1871. It specializes in scientific instruction in agriculture, mechanics, industry and home economics. Another state-supported college for Negroes, Jackson College, Jackson, is a four-year teachers' college. In addition to the state-supported institutions, there are two other senior colleges for Negroes in the state. Tougaloo College, Tougaloo, seven miles from Jackson, was founded in 1869 by the American Missionary Association of the Congregational Church; and Rust College, Holly Springs, was organized in 1870 by the Northern Methodist Church.

Other private institutions of learning include: Millsaps College, Jackson, established in 1892; Belhaven College, Jackson, 1894; Blue Mountain College, Blue Mountain, 1873; Mississippi College, Clinton, 1826; All Saints College, Vicksburg, 1908; Chamberlain-Hunt Academy, Port Gibson, 1877; Gulf Park Institute, Gulfport, 1921; French Camp Academy, French Camp, 1887; Central Female Institute, French Camp, 1866; Whitworth College, Brookhave, 1858; Wood Junior College, Mathiston, 1856; and Okolona Industrial School, Okolona, 1902. Other schools for Negroes: Campbell, at Jackson, organized in 1890; Mississippi Industrial, Holly Springs, 1905; Southern Christian Institute, Edwards, 1875; Piney Woods Country Life, Piney Woods, 1910; Normal and Industrial Institute, Utica, 1903; and another Normal and Industrial at Prentiss, 1907.

Mississippi's educational program stresses health and physical education along with the arts, sciences and vocational development. The State Department of Education and the State Board of Health cooperate in a School-Health program. Through this coordination, wholesome health habits and nutritional practice are fostered in the schools. A government-sponsored lunch program furnished well-balanced and inexpensive meals at the schools. At present 945 schools operate lunchroom programs, accommodating 115,000 school children. The sum of $1,400,000 was earmarked for this purpose during the 1945-46 session.

Recent contribution to the advancement of educational facilities has been made by the State Legislature. In 1940, a free text book system was inaugurated for elementary grades. In 1942 the system was expanded to take in the four years of high school. Included in the system are textbooks for music instruction and forestry. Cooperation between state and local authorities bodes well for the educational welfare of the youth of the state.

Vocational Training School.



GOVERNMENT-FINANCE

Mississippi State Capitol, Jackson.

The year 1932 was marked by a significant step in Mississippi government. As was true of many other states in the early days of the depression, a serious financial deficit existed. In 1932, however, a new state administration and new legislature joined forces in a determined policy of balancing the budget. New sources of revenue were tapped and government expenses painstakingly trimmed. Since then the state government has not only paid for itself as it went along but has also redeemed all maturing bonds, some even before maturity, and has refunded the remaining debt at attractively reduced rates of interest. On January 26, 1945, the legislature unanimously passed a special act setting aside $21,427,000 to pay off all that remains of the bonded indebtedness.

The legislature, as presently constituted, consists of 49 senators and 140 state representatives, the government structure embracing the traditional executive-legislative-judicial trinity, with the legislature made up of two houses. The executive head is the governor, his elective staff being composed of lieutenant governor, secretary of state, attorney general, state tax collector, state treasurer, superintendent of education, auditor of public accounts, insurance commissioner, commissioner of agriculture, clerk of the court, three public service commissioners and three highway commissioners.

Even before the depression government policies were receiving wholesome attention. As early as 1926, a revamping of corporation laws was begun, and subsequent years saw these laws rewritten and amended to such an extent that it is now entirely possible for a group of individuals to apply for a charter of incorporation, get it approved and recorded, and open for business within the span of a very few hours. Increases, in the past ten years, in the organization of domestic capital and the admission of foreign corporations, testify to the value of the more liberal laws now applicable to commerce and industry.

The same legislative body that balanced the budget as well as subsequent legislatures, kept busy along other progressive lines. An agricultural credit corporation law was enacted, and other cooperative agricultural association laws provided. A state budget commission was created to help enforce the budget law. Exemption laws for new enterprises and farm products were passed. A state game and fish department was established to preserve wild life. An oil and gas board was set up to supervise that industry which was then in its infancy. The bank supervision law was overhauled in 1934. Educational laws were improved and the penal system reorganized. In 1935, a social security law was enacted, providing for emergency relief and old age assistance. The State Board of Development was established in 1940.

From the standpoint of commerce and industry, these highly important marks of progress were possibly overshadowed by the passage in 1944 of the "Balance Agriculture with Industry" law. Quoting its caption, it is "An Act recognizing Mississippi's necessity to protect its people by balancing agriculture with industry, declaring the state's public policy to that effect, authorizing the several counties, supervisor's districts and municipalities to acquire industrial enterprises, to issue bonds or other obligations therefor, to operate such industries, to dispose of them and to make contracts relative to such industries, to create the Mississippi Agricultural and Industrial Board, to prescribe its duties and to repeal Chapter 147, laws of Mississippi of 1940."

Even before this Act was passed the plan embraced by it, known as BAWI from the initials of its title, had been in operation under the Mississippi Industrial Act which expired in 1940. Between 1936 and

1940, a number of new industries were established under the plan. Revived by the 1944 Act with a view to postwar planning, it is supported by its sponsors on the ground that previous experience constitutes its strongest assurance for future success.

State Taxes

Parallelling measures to attract new manufacturing enterprise to the state, Mississippi's lawmakers and tax officials have expressed their recognition of the effect of burdensome taxes on business expansion. In a public statement, given out in a period of generally mounting and multiplying taxes, the Tax Commission has indicated that its policy consists of "giving taxpayers a break and the benefit of every reasonable doubt."

Statutes which affect manufacturers are: (1) Ad Valorem tax on property; (2) Privilege (business license) taxes; (3) Sales taxes; (4) Corporation Franchise tax; and (5) Income tax. Also to be mentioned with these are several fees; Charter registration fee; factory inspection fee; unemployment compensation assessment; and severance fees on oil and timber.

All property is assessable for ad valorem tax as of January 1 of each year. Personal property is assessed each year and real property every two years in the even numbered years. The present rate is four mills with the provision that the Governor may reduce the rate to not less than two mills, the rate for 1945 by proclamation of Governor Bailey. Exemption is granted to qualifying homesteads up to $5,000 of assessed valuation or 160 acres of land.

Every person desiring to engage in any business must first secure a privilege license. These range upward in cost from $4 for drain tile, sewer pipe and culvert manufacture, to $1,400 for oil mills, the rate depending on both capacity and type of business.

Levies on sales of tangible property range from one-eighth of one per cent for sales at wholesale up to two and one-half per cent on natural gas sales, with one-quarter of one per cent being by far the most prevalent rate.

The franchise tax consists of a levy of $1.50 per $1,000, or fraction, of the value of capital used in the state. Capital consists of capital stock, surplus, undivided profits. Book value is accepted as prima facie evidence of true value. Minimum levy is $10.

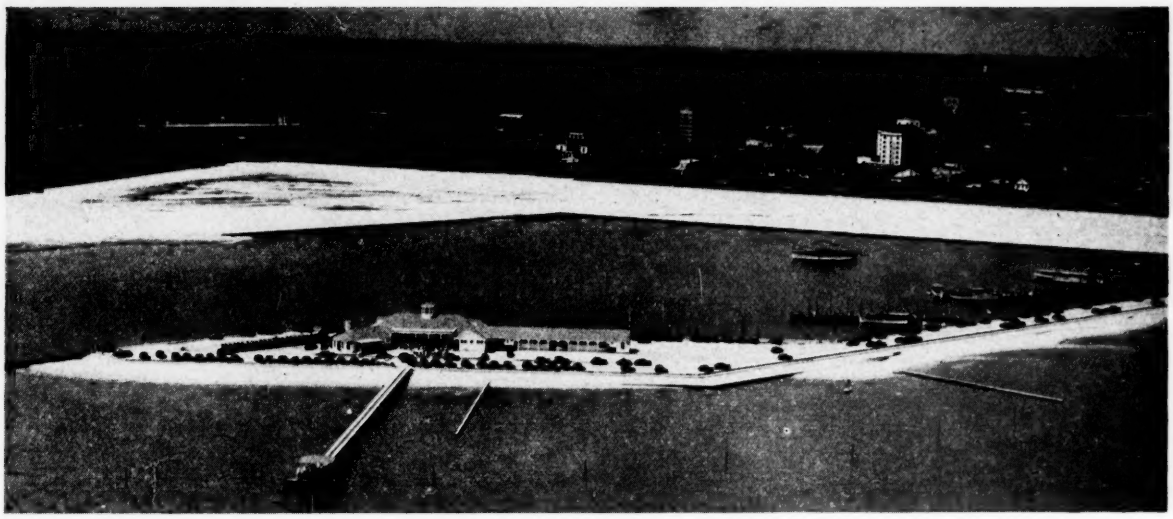
Income taxes, based upon a graduated scale, call for one per cent on the first $4,000 over specific exemptions; two per cent on the next $3,000; three per cent on the next $3,000; four per cent on the next $5,000; five per cent on the next $10,000; and six per cent on all over $25,000. Only income allocable to the state is taxable.

The rate of fee for recording charters is $20 for the first $5,000 of capital stock and $2 for each additional $1,000, up to a maximum of $500. Factory inspection under the supervision of the State Board of Health requires payment of an annual fee with a minimum of $10 for establishments employing five to ten persons and maximum of $200 for plants with over 300 employees. Unemployment compensation contributions amount to 2.7 per cent of gross payrolls of eight persons or more, no part of which may be deducted from salaries or wages. Maximum salary against which tax applies is $3,000. A severance fee amounting to three per cent of the value of timber or timber products is levied at the point of severance; and a similar assessment applies to petroleum at the rate of six cents per barrel or six per cent of value, whichever is greater.

Banks and Finance

With assets totalling $770,784,000 as of June 30, 1945, Mississippi's 202 state and national banks consider themselves well financed to assist industry to reconvert from war to peace pursuits and to further the development of new enterprise. Of these assets, $469,868,000 are held by 179 state banks and $200,916,000 by 23 national banks. Research by the State Department shows that in 1900 assets of the state's banks were $19,345,000 indicating that growth since the turn of the century was at the rate of 3,884 per cent. Taking a period of wartime relationship similar to that of today, total resources for 306 banks in 1919 were $225,400,000. This comparison reveals a between-war gain of $545,384,000 or 242 per cent.

An interesting change in financial position of the banks is to be seen in a comparison of present-day composition of assets with those of an earlier date. On December 31, 1914, the aggregate assets total $93,600,000. The principal assets were $57,000,000 in loans and overdrafts, $12,400,000 in investments, $4,000,000 in fixed assets and $19,000,000 in cash process and due from banks. Principal liabilities consisted of $62,600,000 in deposits, $10,200,000 in borrowings and $20,900,000 in capital, surplus and undivided profits. In 1944, the last period for which complete details are available, total assets-liabilities had climbed to $559,000,000. Principal assets at that time were $75,000,000 in loans and discounts, $276,100,000 in securities, $4,400,000 in fixed assets and $202,100,000 in cash and funds due from banks. Principal liabilities were $525,300,000 in deposits, no borrowings shown, and $32,600,000 capital, surplus and reserves.



The Gulf Front.

RECREATION

In Mississippi it is possible to enjoy recreational pleasure the year around. Combining scenic and climatic advantages, the Gulf Coast country displays the color of the Old World and the atmosphere of the Old South, charmingly blended with modern types of facilities. Between Pascagoula and Bay St. Louis, U. S. Highway 90, known as the mid-Gulf section of Old Spanish Trail, passes through some of the oldest and most picturesque settlements of the Mississippi Valley. There the beach, instead of being sea-eroded and weather beaten, is profuse with subtropical vegetation. Fine hotels and well-appointed resorts, surrounded by palms, pines, magnolias, oaks and a wealth of flowering growth, give the region a year-around atmosphere of enjoyment and convenience that is enhanced by an ever-changing greenness. Wooden piers, diving platforms and boat landings jut into the water. Freezing weather is practically unknown, and golf, fishing and a wide variety of outdoor sports are enjoyed the year around.

Quail in Season.

Along with scenic delight is blended historic interest. On the shores of Pascagoula Bay stand the moss-covered ramparts of the "Old Spanish Fort," designated as such through the ensuing centuries albeit the building was erected by the French in 1718. Around the rotting wharves and the aged outworks marsh grass and Spanish moss grow now as they have grown through long years.

Not many blocks away, near the center of Pascagoula, flows the "singing" Pascagoula River which produces a mysterious music. The singing sound, like a swarm of bees in flight, is most distinct on warm summer nights. Barely caught at first, the music seems to grow louder and nearer until finally it sounds as though directly underfoot. Many scientific explanations of the phenomenon have been offered but none has been proved. Varied theories attribute it to some strange species of fish, the grating of sand on the hard slate bottom, a current sucked past a hidden cave or natural gas escaping from beds of sands.

Forty miles farther along the highways is to be seen Beauvoir, the last home of Jefferson Davis, president of the Confederacy. It is now a state-supported home for Confederate soldiers, their wives and widows. The four original buildings are still standing —the big house in the center with a cottage on either side and brick kitchen in the rear.

Deep Sea Fishing.

Recreation is enhanced by instruction for those tourists who visit Mississippi's historic landmarks. The Old Capitol in Jackson is one of its most historic buildings. There Andrew Jackson and Henry Clay addressed the State Legislature and there Jefferson Davis on his triumphant return from the Mexican War spoke to crowds from the second floor balcony. The Ordinance of Secession was drawn up within its walls and the last public address of Jefferson Davis was made there to the Mississippi Legislature in 1884. To the southward, romantic history is wrapped up in Natchez, first to bloom as a city in the state's colorful career. Natchez was the site of the rich and fabulous era of a former frontier from which time-mellowed homes and customs still exist as memorials. Vicksburg with its stirring reminders of bygone martial glory, and other points of memorable importance in the state lend virtue to the slogan, "See America First." For the full enjoyment of these opportunities Mississippi's hotels and tourists courts, backed by Mississippi hospitality, are so spaced and constructed as to provide a maximum of comfort and convenience for discriminating tourists and travelers.

Deer Hunting.

Among the national parks of the state, Vicksburg National Park is outstanding as it rises crescent-shaped along the Mississippi River to mark the "Gibraltar of the Confederacy" and the site of one of the most dramatic battles of the Civil War. It is one of the best marked and most beautiful battlefield scenes in the world. Composed of 1,323 acres of rolling scenic beauty, it contains rare historic monuments in the form of 1,598 memorials, trenches, fortifications and earthworks which tell the story of the siege and battle of Vicksburg. Here, annual meetings are held by relatives of the soldiers, both from North and South, who participated in the historic event.

Eleven state parks, distributed throughout the state, supplement the Coastal playground. These consist of Magnolia State Park, near the Gulf; Percy Quinn Park, on the Tangipahoa River; Lake Shelby Park, constructed by the United States Army for soldier recreation; Clarkco Park, near the Alabama line; Roosevelt Park, 35 miles from the State Capital; Legion Park, Leroy Percy Park and Holmes County Park, all in the central part of the state; and three in the northern part, Tombigbee, Tishomingo and Spring Lake. All eleven are easily accessible by improved highways and afford the combined advantages of wild life and recreational facilities.

Nature has endowed Mississippi with a variety of wildlife resources. In 1932 the State Game and Fish Commission was set up by the legislature to administer the wildlife of the state in a manner to perpetuate this heritage for coming generations. A system of refuges with total of 94,390 acres has been set up. These refuges furnish a surplus of deer, turkeys and quail with which to stock surrounding areas, and supplies of trapable game to be moved to more remote sections where such stocks are needed.

The bobwhite quail is the most popular game bird and Mississippi has established a reputation for good quail shooting. Several field trials are held each year; some of these are national in scope. The Commission sees that a good surplus of quail is maintained for shooting. More than 100,000 birds have been released in suitable areas during the past few years. A statewide border strip planting program was carried on for three years to increase food and cover for quail; and large quantities of lespedeza seed have been distributed free to farmers and sportsmen. Due to this program and the wartime shell shortage it is likely that returning servicemen who enjoy hunting, as well as other post-war huntsmen, will find the largest crop of quail in several years.

Other game species found in sufficient numbers to furnish good hunting sport are squirrels, deer, turkeys and doves. In addition to these, migratory water fowl abound in the Mississippi Valley, and duck and geese are plentiful along the river and in the marshes off the Gulf coast. Many inland lakes also furnish excellent duck shooting when weather conditions are conducive to duck flight. A waterfowl refuge has been

Golfing on the Gulf Coast.

established on the Sardis Reservoir and suitable duck foods are planted each year in the various lakes to help improve the sport.

Good wildlife management is bringing about an increase in deer population. Many areas where deer had been killed out are being restocked. Within the past seven years the deer population has risen from 7,000 to 18,000. About 150 bucks and does were trapped on three refuges this season and released in counties where they had become scarce.

Trapping in the state has become an industry as well as a sport. Female raccoon have been brought in and released over a period of several years. These animals are now abundant enough in most parts of the state to furnish income as well as pastime for trappers. A three-year program carried out in the coastal muskrat marshes has helped increase trappers' income almost two-fold. In 1932 there were few beavers remaining and the seasons were closed to trappers. A live trapping program ensued and has brought this valuable fur-bearing animal back to substantial wildlife rank. Beavers are now found in 73 of the 82 counties and there is an estimated 16,000 population. Trapping for pelts under Commission supervision will be in order as soon as legislative action makes it legal.

For the diversion of anglers the fighting big-mouthed black bass is the prize for the casting rod. Some are landed each season that weigh up to eight pounds. Crappies and blue gill bream are the favorite pan fish. Four-pound specimens of crappie are frequently caught in Sardis Reservoir, where the limit of 15 is often caught within an hour's time. Other favorite places to fish are Moon Lake, Lake Washington, Ferguson Lake, Wolf Lake, Eagle Lake and Lake Lee. At one time these lakes were within the course of the Mississippi River and some of them still become flooded during high water on the river. Bass, crappie and blue gills abound in all.

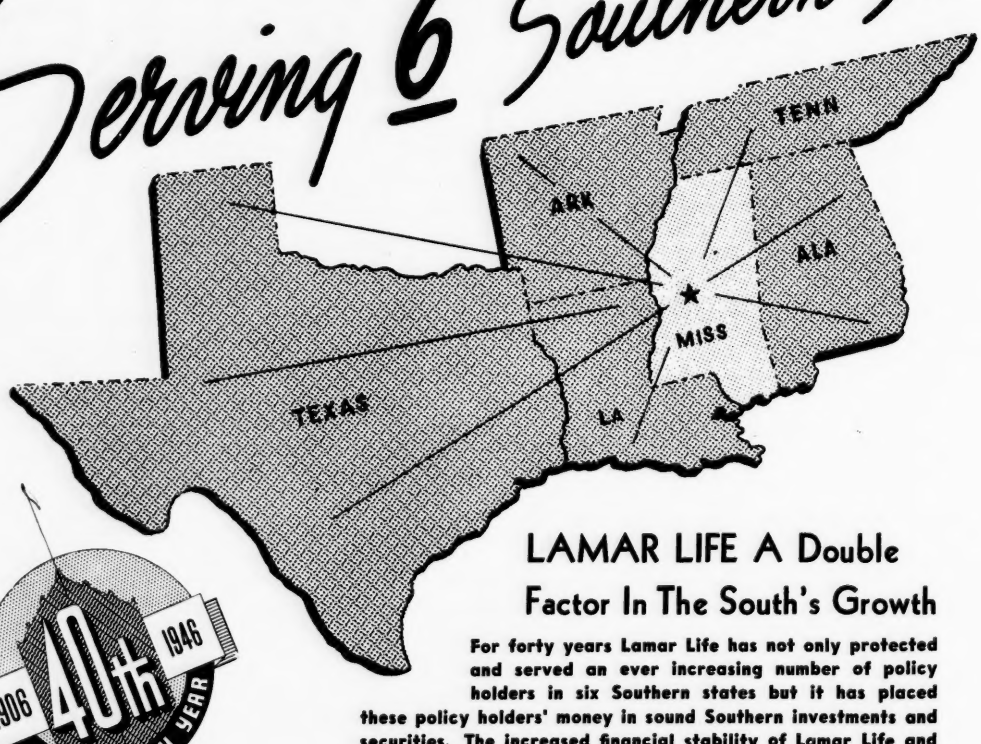
In the Gulf Coast counties there are many streams and bayous well-stocked with fresh water game fish and, at certain seasons, speckled trout and red fish migrate into the fresh water and furnish excellent sport for pole fishing and trolling. Along the coast the fishing community enjoys an unusually long run of migratory sea fish by reason of the constant stream of food poured by the Mississippi River into the feeding grounds of schools of mackerel, tarpon, sea jacks and channel bass. Many fishing excursion boats ply the Gulf waters during the entire fishing season.

Commercial fishing for non-game fish is becoming a big industry. Approximately 3,000 licensed fishermen are engaged in catching spoon-billed catfish, buffalo, carp, drum and catfish. As much as 46,511 pounds of commercial fish per month have recently been taken from Eagle Lake alone and there are a number of other lakes where comparable catches are being made.

Contributing to pleasant recreational activity in addition to travel and sports, a series of annual events are conducted. In January, amateur and professional field trials for bird dogs and beagles are held. February is the month of carnivals and festivals. In May, schools and colleges hold spring festivals. July is a period of regattas along the coast. Watermelon carnivals and cotton festivals take place in summer and fall. The State Fair and State Horse Show are held at the capital in October.

Bathing Beach.

Serving 6 Southern States



LAMAR LIFE A Double Factor In The South's Growth

For forty years Lamar Life has not only protected and served an ever increasing number of policy holders in six Southern states but it has placed these policy holders' money in sound Southern investments and securities. The increased financial stability of Lamar Life and the growth of the territory it serves proves the wisdom of investing Southern dollars in Southern progress. When you invest in a Lamar Life policy you not only know your money is safe but you know it will be working to create new prosperity in the South.

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The Lamar Life, with agency personnel in Alabama, Arkansas, Louisiana, Mississippi, Tennessee and Texas welcomes the opportunity to make mortgage loans in this area. Send your application direct to the Company's Home Office. Lamar Life's faith in the South is reflected by the fact that all of its investments are in Southern securities except amounts invested in Government bonds.

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OVER ONE-HUNDRED MILLION DOLLARS OF INSURANCE IN FORCE

SOUTHWEST DESTINED TO BE BRIGHT SPOT

by

W. N. Deramus

President
Kansas City Southern and
Louisiana & Arkansas Railways

THE Southwest is destined to be the brightest spot in the nation in the next decade. Why do I believe this? The answer was written millions of years ago when nature, in her devious ways, created oceans of oil, a seemingly endless flow of natural gas and a treasure trove of minerals and metals beneath the wide prairies, forested hills and lush bayous of this colorful corner of America. It is a simple matter of cause and effect. The cause is there in an abundance of almost everything that man requires. The effect, slow at first, has gained tremendous momentum in the war years. Now, with ample capital and manufacturing knowledge available, it is difficult to see anything but rapid, healthy growth in this region.

How that technological skill we have come to term "know-how" has spread over these far hills and prairies is illustrated by the fact that New England watchmakers called upon southwestern firms to produce intricate timing mechanisms for war use, while arsenals on the Eastern Seaboard sent experts to Oklahoma to learn how huge gun barrels of superior quality were made. This mechanical versatility has been developed by the oil industry, whose needs extend from delicate instruments used in geophysical exploration for oil structures and other electronic devices of the most sensitive character to giant pressure vessels for high octane refining.

Our railway system—Kansas City Southern Lines—passes through six Midwestern-Southwestern states — Missouri, Kansas, Arkansas, Oklahoma, Louisiana and Texas. Already from this area come more than half the total world production of petroleum, 70% of America's zinc, 40% of her lead, 90% of domestic bauxite for aluminum, together with a large percentage of coal, natural gas, timber, livestock and grain. Also on the fabulous list of the area are iron ore, limestone, dolomite, marble, salt, sulphur, antimony, mercury, slates, shales, chalk, lignite, silica, vanadium — even diamonds.

The development of major resources in these states in recent years, especially along the Gulf Coast, has been outstanding, but more varied utilization of the region's natural wealth is assured in the immediate future. This assurance comes from the close teamwork of industry and science. Of particular import in this respect are the rapidly expanding facilities and activities of the Midwest Research Institute of Kansas City—an organization sponsored by industry for scientific research in solving manufacturing problems and evolving new uses for Midwestern and Southwestern productivity. Here, where some of the world's largest oil refineries stretch for miles, huge new plants that use the latest techniques and processes are producing or preparing to produce synthetic rubber, aluminum, magnesium, fertilizers, carbon black, alcohol, turpentine, paper and many chemicals and basic ingredients for literally thousands of products for better living.

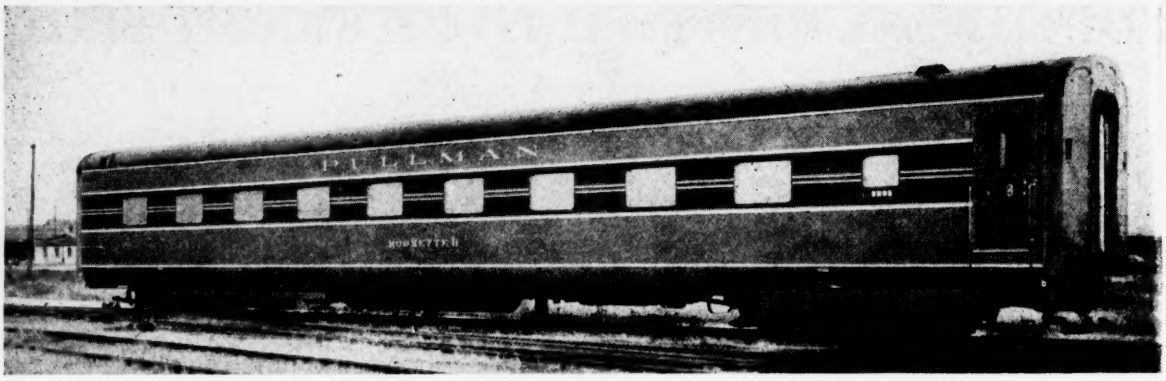
A region with such varied riches is indeed fortunate. But the Southwest has much more. It offers plenty of living room, with a choice of climate from temperate to semi-tropical. It says to all who will work and plan, "Here are big, clean cities and small, quiet towns where you may prosper. Here are ranches of thousands of acres and small farms where you may live well from the land. Here are condenseries that send trucks to farm gates daily to buy all the milk that can be produced . . . canneries for fruits and vegetables . . . ready and good markets for poultry, livestock, berries, melons, grapes, rice and every product of orchard and field." Even the Gulf waters and the many inlets and bayous along the coast yield millions of dollars each year from oysters, shrimp, fish and other seafood, with additional millions derived from pelts, especially from muskrats that thrive in the marshes.

To round out the answers to all of man's desires, the Southwest is blessed with health-restoring waters in America's first national park—Hot Springs—with recreation and beauty spots in the interior and along the seacoast that compare favorably with the more famous resort areas of our country. And the industrial awakening of the region has its counterpart in a realization that here are outdoor attractions for all of America to see and enjoy. That realization long ago prompted the organization of the Ozark Playground Association, whose dissemination of information about the Ozarks brings millions of visitors to Missouri and Arkansas annually. Now the Ouachita National Forest Development Association is beginning to tell America more about the picturesque crags and tumbling streams of the rugged Ouachita (Washita) mountains . . . of good hunting and fishing and incomparable vacation retreats.

The Southwest is replete with historic romance and color, reflected in the quaint and mellow atmosphere of the New Orleans French Quarter, the storied Evangeline country, the Alamo and the folk songs of the cowboy that tell of love and six-guns on the dusty cattle trails.

Most of this great region was acquired by the United States in the Louisiana Purchase of 1803. Texas gained her independence from Mexico in 1836. Oklahoma was "Indian Territory" until 1907. Less than half a century ago, much of this wide expanse was virgin timber, lonely prairies and m a r s h l a n d thought to be useless. Now it contains the framework for an unprecedented economy, built on a foundation that includes every need for a wide range of manufactures, where domestic markets are growing fast and accelerated foreign trade is sure to flow through nearby Gulf ports.

Here is the new frontier for an America that is just coming of age.



The Roomette, with 18 completely enclosed private rooms containing folding beds.

PULLMAN, EIGHTY-YEAR-OLD SERVICE IS SOLD TO THE RAILROADS

SALE of the sleeping car business of the Pullman Company to the country's railroads focuses attention on a transportation convenience dating back to the period before the War between the States when George M. Pullman sold the idea of sleeping car service to the railroads only after the usual difficulties encountered by the pioneer.

"Old No. 9" was the first Pullman sleeper. Reconstructed in 1859 from an ordinary day coach, the car was 40 feet long, or one-half the present length of a Pullman car. Except for its wheels and axles, it was practically all wood. The roof was flat and so low that a tall man was liable to bump his head.

Wood burning stoves supplied heat in this first step toward modern sleeping car service that now embraces such features as lightweight, streamlined, articulated cars and individual rooms that have the comforts of a hotel on wheels. Candles were used for illumination; there were ten upper and ten lower berths. Mattresses and blankets were furnished, but there were no sheets.

The first real Pullman sleeper was built in 1865. Named the Pioneer, it was longer, higher and wider than its predecessors. In fact, railroad bridges and platforms were changed to permit its passage. One of its innovations was the folding upper berth. Heat was from a hot air furnace under the floor. Light was still by candles. Ventilation was through deck windows.

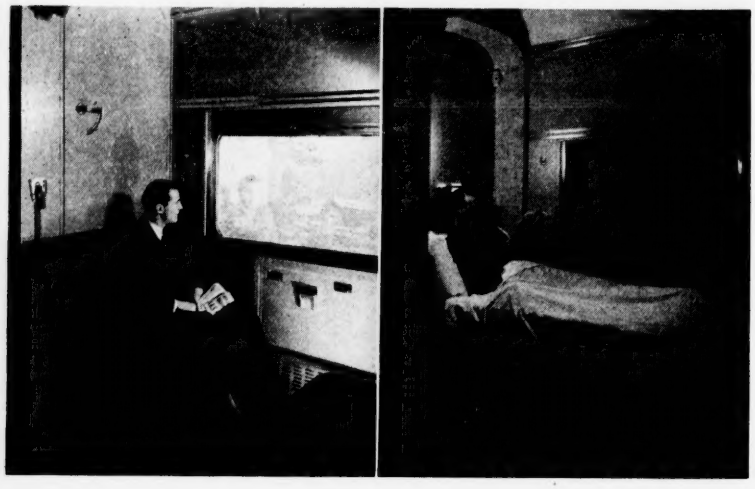
This initial car built new to Pullman designs cost $20,000, or several times as much as a conventional car of its day. It had two compartments at each end, eight sections and a roomier washroom. Much of its black walnut woodwork was inlaid. There were many mirrors. Upholstery was French plush. The car was fully carpeted. Ample bedding was provided. Its 16 wheels, however, were later abandoned in favor of 12.

The Pioneer was requisitioned for use in the funeral train that carried President Lincoln's body to Springfield, Ill., after his assassination in 1865. A few months later, the car was requested by General U. S. Grant. After these two trips, the Pioneer was soon in regular service between Chicago and St. Louis.

These early efforts marked the beginning of 80 years of success of the Pullman Company in the transportation field. The centennial year of 1876 saw Pullman cars 70 feet long. Oil lamps replaced candles. Air brakes appeared. Hot water heat was used instead of stoves and furnaces. Six-wheel trucks were definitely adopted.

The car vestibule, which appeared in 1887 was a Pullman invention. Although at first it enclosed a narrow passage between cars, it later was widened to full car width. With 12 sections, drawing room, smoking room, high backed seats,

Below—Interior of one of the Roomette compartments showing the sofa for daytime travel and its conversion to sleeping quarters.

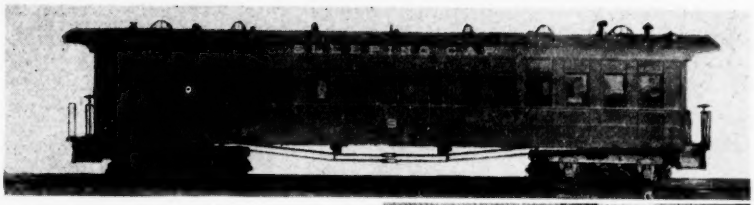


much carving and ornamentation and higher windows, the Pullman car was blossoming into the full glory of the later Victorian period.

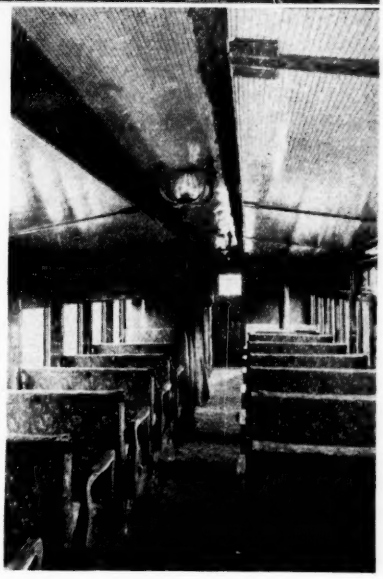
No advance up to 1907 meant more to safety in railroad travel than the all-steel construction used in that year. Three years following the experimental car, the type was adopted for general service. Four feet longer than earlier models, Pullmans now contained 12 sections, drawing room and smoking room. They were steel sheathed outside. Electricity for lights was generated by an axle device. Heat was by low pressure vapor. Interiors were becoming more quiet, moderate and tasteful.

Ten years later the Pullman contained innumerable hidden mechanisms, concealed devices and accessories to give the maximum of comfort and luxury to the twentieth century traveler. A single car contained nearly a mile of insulated copper wire; over half a mile of pipes and conduits. Batteries, switches, valves, dynamos, motors, push buttons, regulators and signal apparatus and controls were among its equipment.

Fourteen rooms were embodied in the single room car of 1927. Each room had full toilet facilities, stationary bed across car, folding washstand with mirror and sidelights, drop shelf for writing or serving meals.



Above—"Old No. 9," the first Pullman car. It was practically all wood except wheels and axles, the seats were immovable, heat was from two wood-burning stoves and light, by candles. Its roof was so low that a tall man was liable to bump his head.

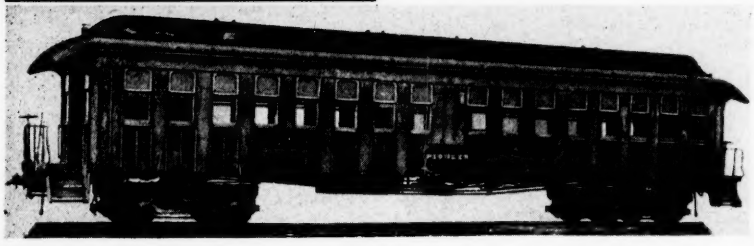


Right—Interior view of "Old No. 9." The car was built in 1859. The 10 upper and 10 lower berths were furnished with mattresses and blankets, but no sheets.

Heat was controlled individually. There was an electric fan and an air intake in the door. Air conditioning was introduced in 1929. With successful operation of the air-conditioned car, Pullman rapidly added this innovation in travel comfort to its equipment. By 1937, the company operated over 50 per cent of air conditioned cars in the country.

The duplex unit of 1936 was constructed so it could be used in a train of regular standard cars. It was alloy steel, contained 16 rooms. In addition to two regular bedrooms, there were 14 single rooms, half of which were at floor level, the rest reached by three steps. The roomette car of 1937 contained 18 completely enclosed spaces with beds that folded into the wall at one end and a sofa-seat for daytime service.

Below—The "Pioneer," first real Pullman sleeping car. Constructed in 1865, it was longer, higher and wider than its predecessors. In it were the raised upper deck and folding upper berth. Candles still furnished illumination, but heat was by hot air furnace. It had two compartments each end, eight sections, a washroom. Berths had ample bedding. The "Pioneer" was in the Lincoln funeral train.



Three years passed and the Pullman Company offered the three-tier berth sleeper to the budget-minded traveler. This car accommodated 42 to 45 passengers. The berths run perpendicular to the length of the car. The duplex-roomette of 1942 is a combination of the two previous types into what the company described as a unit giving passengers individual rooms and the comforts of a hotel on wheels.

Among the first contributions of the Pullman Company to rail passenger service was unified, long distance service over connecting lines and the elimination of passenger transfer every hundred miles or so. Other "firsts" scored by the company were the dining car and the first streamlined train.

Pullman-Standard Car Manufacturing Co., manufacturing affiliate of the Pullman Company, delivered the first streamliner to the Union Pacific in 1934. Visited by 1,196,000 persons on a 12,625-mile ex-

(*Continued on page* 166)

WAGES, PRICES AND THE FORGOTTEN PEOPLE

by

Martin L. Davey

Kent, Ohio

AS a Jeffersonian Democrat I feel that there are some facts and figures which ought to be brought to the attention of the American public. They seem to have been overlooked by our governmental representatives in connection with the present bewildering discussion of the wage-price problem.

It is the most natural thing for people to want raises in their pay. All of us do that. Probably the greatest common denominator of human beings is selfishness. Sometimes it is wise and constructive. But there are many times when it can be very unwise and destructive. Enlightened selfishness is what makes the world move forward.

When I was in Congress twenty years ago I secured some official government figures which were rather significant. That was a period of prosperity. I assume that the figures are not very different today.

I was informed that 80% of the people who were employed at that time, were employed by so-called small business. These people are now and always have been the customers of the big industries.

But I was told that 75% of the corporations paid no income tax. At that time, the first five thousand dollars of profit was exempted. This means that 75% of the corporations made less than $5,000.00, or nothing, or lost money. I assume that the percent is about the same for unincorporated businesses. This means, if it means anything, that 75% of the employing concerns have no margin of profit out of which to raise wages and salaries. But their people are still the customers of the big industries.

It has been said that out of every 100 men who start in business only 7 are still in business at the end of 20 years. The mortalities in the first five or ten years are very heavy. Nevertheless, whenever a man starts in business he employs people.

When one fails, another one comes into the picture to take his place. All together these struggling businesses, which are the big majority, do employ a tremendous number of people. It is one of the grand things about America that every man has a chance to try it on his own. Those who succeed, build up the permanent industries.

Some other figures interested me very much, which were published earlier this year. It was stated there were 55 million people employed in this country. It was also stated that from 12 to 15 million people were engaged in war industries. This means that 40 million people were not engaged in war industries. These 40 million did not have the benefit of high war wages. Their take-home pay during the whole war period was seriously limited. These 40 million were in the economic squeeze. They got along as best they could, pulled their belts a little tighter, swallowed hard, bought war bonds, and endured their financial limitations with the definite expectation that high war wages were only temporary, and that when the war was over they could have a chance once more to live on a plane of relative equality.

I will not attempt to argue whether the high war incomes should, or should not, be maintained. That would naturally be the subject of violent debate. But if they are maintained, with much less production, what is going to happen to the forty million people who never had high war incomes? Will they be subjected still further to the horrible process of the economic squeeze? Don't you think that these forty million ought to have some consideration?

Martin L. Davey

If the take-home pay in the highly paid war industries is maintained with seriously lowered production, how can anyone prevent a serious rise in prices? Then how will the forty million be able to buy the higher priced articles? Would it not be infinitely better for everyone if, instead of forcing an increase in prices, we could have a gradual return to a lower price basis for goods?

When the present shortage of goods is overcome, as it surely will be in the next few months, then if prices of goods have been forced still higher, the forty million will be able to buy less and less goods. Then there will be fewer and fewer jobs. I fear that the present program is leading us straight toward the disaster of inflation, some of which we already have. Whether inflation can be controlled I do not know. But if we have merely additional inflation and not the run-away kind, how much will the American dollar be worth? I am thinking of the money that the self-sacrificing people have saved in the banks, in life insurance and in war bonds. Will they be robbed of part of the value of their dollars? If they are grievously injured in this way, just who would be helped? What would be the fate of all the millions of people drawing old age pensions and other kinds of pensions, and those who live on life insurance annuities and other forms of fixed income? Will part of the necessities of life be taken away from these people?

Recently some alleged government economists were credited with the theory that "industry" would save 24% by the elimination of the excess profits tax, the overtime pay and the

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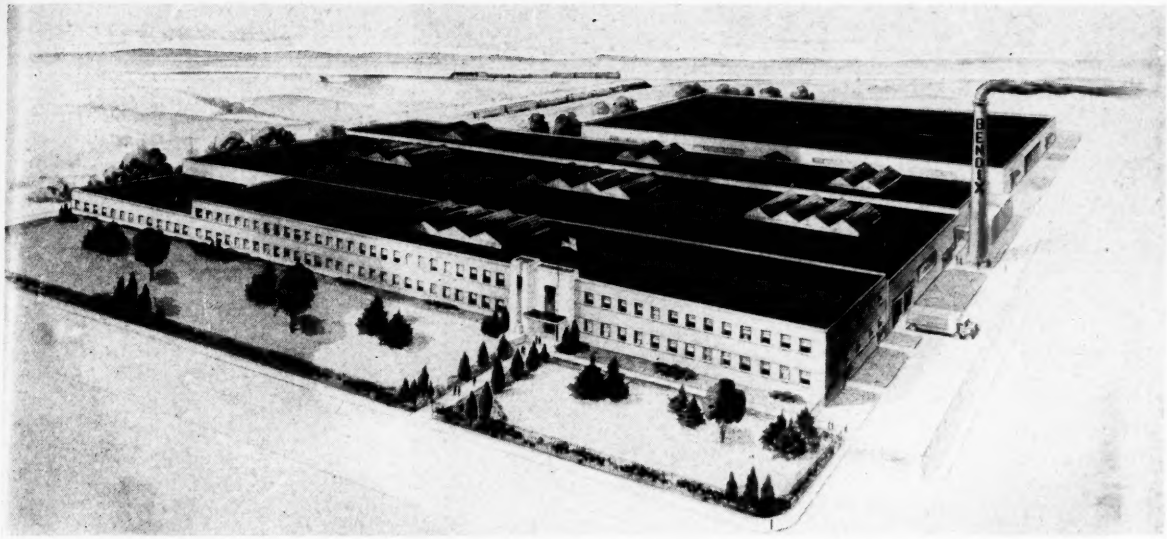


Above—Towson plant of radio division of Bendix Aviation Corp., as it will appear when alterations and additions are completed at a cost of $500,000. The factory was recently purchased from the federal government for approximately $1,700,000.

Bendix Expanding in Maryland to Produce Home Radios

BENDIX radio division of Bendix Aviation Corporation is proceeding on $500,000 additions and improvements at the $1,700,000 Towson, Md., plant being purchased from the Defense Plant Corporation.

Both acquisition of the plant and the additions and improvements are part of a plan to produce radios and communication equipment in Baltimore, according to W. P. Hilliard, general manager of the division.

The purchase includes the main building containing 215,000 square feet of floor space, a 15,000-square foot annex, a parking lot, water tower and specialized machinery. Equipment for which the firm has no peacetime use is being sold by the government.

The improvements to cost $500,000 will include construction of a 20,000-square foot addition to the present annex, extension of the second floor of the main building out to the end of the plant, construction of a bay on the rear of the main building to add another 20,000 square feet and construction of a railroad siding.

The railroad siding is to be built by the Maryland and Pennsylvania Railroad and is required as part of the company's program for mass production of radios and radio-phonographs. A separate track is needed to handle the large volume of incoming cabinets and outgoing finished sets.

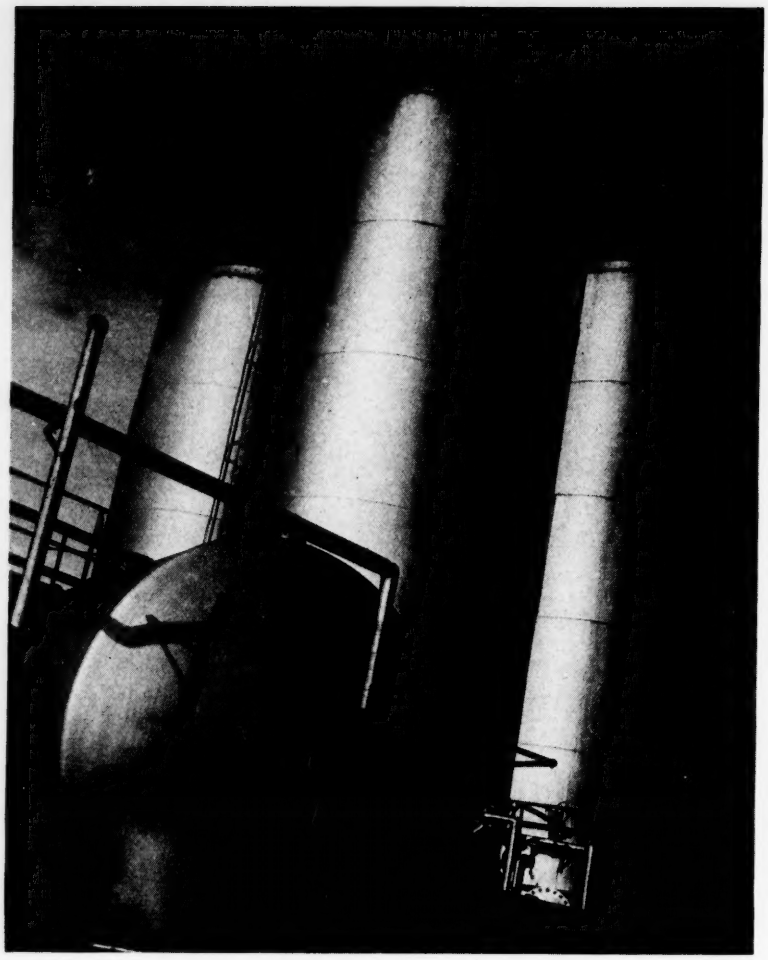
Completion of the projects will give Bendix Radio a total of 310,000 square feet of floor space in its Towson plant, where the radio division's Baltimore activities will be concentrated. The original plant on Fort Avenue, South Baltimore, has been closed and personnel and machinery moved to Towson. Monument Street activities will also be moved to Towson.

The second floor addition will house the company's engineering research department. Space in the addition to the annex will be devoted to expansion of the machine shop and sheet metal shop. The bay to the rear of the main building will provide increased production space.

With reconversion completed and full production under way on the 1946 line of radios, combination units and communication equipment including marine radio, personal aircraft radio, railroad radio, aircraft receivers and transmitters and automatic direction finders, the Towson plant will employ three times the number of pre-war workers. The payroll will be in the neighborhood of $500,000 monthly, it is estimated by Mr. Hilliard.

The Bendix radio division came to Baltimore in 1937. Occupying a plant on Fort Avenue, the division later expanded to Towson and to two other locations in Baltimore. During the war the company turned out more than $400,000,000 in aircraft radios, radar and communication equipment for armed forces of the United States and the allies.

Sixty per cent of the company's post-war dollar volume will be radios and radio-phonographs. Advance showings indicate 24 models, including plastic table radios, wood table radios, console models, and table and floor combinations featuring the Bendix "Swingadoor" record changer. Full production is contingent upon deliveries of components.



Left—Outside tanks used for storing oils and solvents used in manufacture of paint at a DuPont plant.

SOUTHERN STATES SHARE BIG IN $300,000,000 DUPONT PROGRAM

PROJECTS in five Southern states are included in the $300,000,000 post-war expansion program E. I. du Pont de Nemours and Company has planned for the next three years.

The company's projects, disclosed recently by Walter S. Carpenter, Jr., president, envision the construction of new plants in widely scattered communities throughout the nation.

Projected for the South are four new plants and the expansion of facilities at two existing company plants. The communities are: Atlanta, Ga.; Martinsville, Va.; Orange, Tex.; La Porte, Tex.; Washington, W. Va., and Waynesboro, Va. In addition, a site near Chattanooga, Tenn., is being considered by Du Pont as the location of a post-war nylon yarn plant. Final action will depend on matters still to be worked out.

High-grade automotive finishes will be among the products of the plant planned for Atlanta, Ga. These finishes, including "Dulux" synthetic resin enamels and "Duco" nitrocellulose lacquers, already being manufactured at the company's other finishes plants, will be produced in Georgia primarily for consumption by the expanding industries of the region.

House paints will also be manufactured, and possibly new types of finishes, inasmuch as the company's research laboratories are constantly seeking improvements. While the plant is to be of substantial size, chemical plants do not require the number of employees needed in mechanical industry where much handwork is required. It is felt that operation of the plant would provide

by

Henry O. Belleville

Left—Lucite, one of the products made from that inexhaustible source of raw materials—coal, air and water. Strength, light weight, weather resistance, clearness and ability to carry light rays around corners are some of its features.

considerable opportunity to use raw materials available in the South.

At Martinsville, Va., a major project will expand facilities for the production of nylon yarn at an existing nylon plant. The present plant went into operation in November, 1941. Approximating $10,000,000 in cost, the new production facilities will be designed to assure increased output of fine yarns needed for hosiery and other textiles.

The first nylon plant was built at Seaford, Del., and began operation in December, 1939, about a year after nylon was announced. Demand for nylon was so heavy that the original plant was soon expanded and a second plant was begun at Martinsville. The latter came into operation late in 1941.

Shortly after Pearl Harbor the change-over of both plants from hosiery yarn to yarn for military purposes was made complete. From that time until the conclusion of the war all nylon yarn continued on allocation for these uses, including parachutes, tire cords, glider tow ropes and mountain climbing ropes, tents, and other purposes.

"To take care of the anticipated post-war demand, plans were made to increase output considerably," a company statement said. "It is contemplated that not only will a third plant be built but that the capacity of the other two will be materially expanded."

Two modern plants for the manufacture of chemical products are under construction in Texas. One unit being built near Orange, Tex., is the Sabine River Works, where intermediates for the manufacture of nylon for hosiery, textiles, bristles and plastics will be produced. The other, known as the Houston Plant and located about 20 miles southeast of Houston on the Houston-La Porte Highway, will make fungicides, insecticides and anthelmintics.

The Sabine River Works will occupy a portion of the 1000-acre tract of the former Stark Estate, bounded on the northeast by the Adams Bayou, and with the principal entrance fronting on County Road. The buildings of varying heights, from one story to five, will be of concrete, steel, and brick construction.

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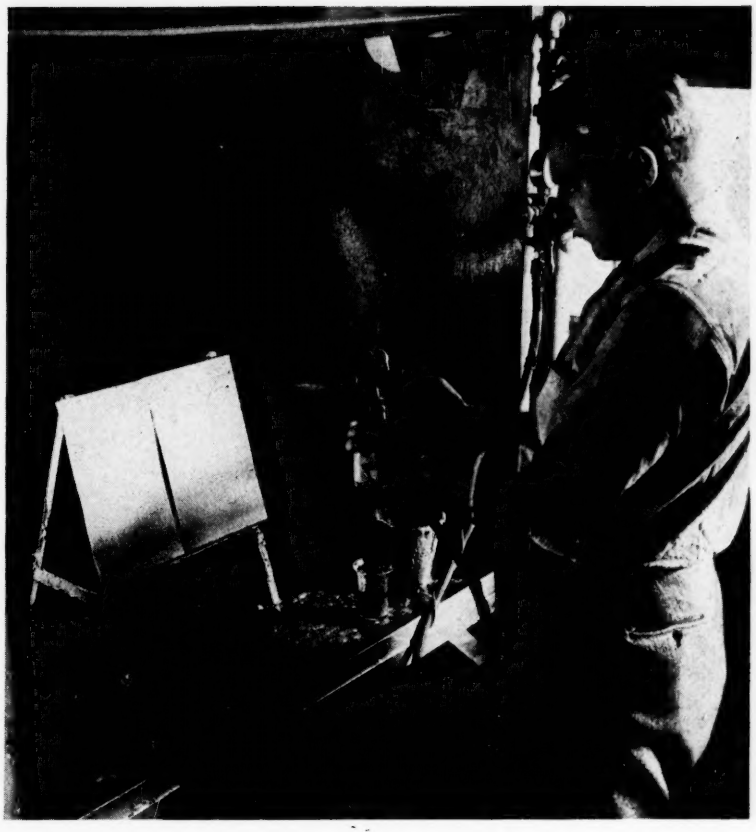
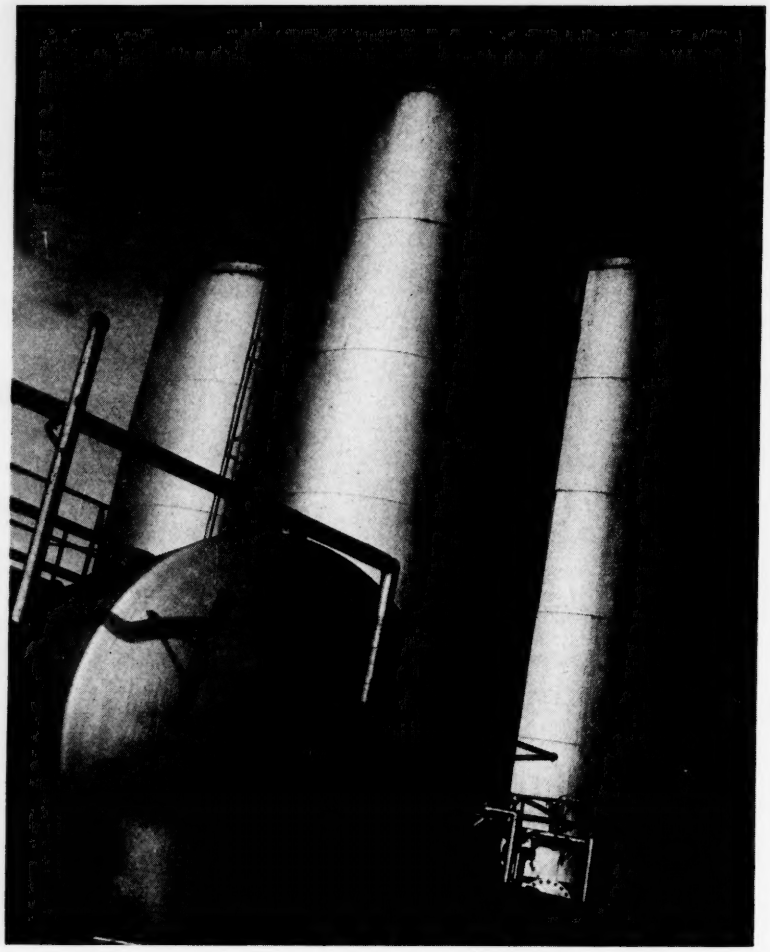


Above—Color test by spraying in the control laboratory of a DuPont paint plant.

Below—Nylon, one of the most recently developed synthetic products, made from coal, air and water, contributes a new material to American industry. Providing properties not found in natural products, nylon is used in the manufacture of hairbrushes and toothbrushes, formerly largely dependent upon hog bristles, much of which were imported. New and improved surgical sutures, fishing leaders and tennis racket strings are also made from nylon, in addition to the widely heralded hosiery and clothing. The photograph shows nylon as delivered to the plastics department in the form of flakes. It is being fed into the hopper of the spinning machine where it is melted and extruded into filaments.



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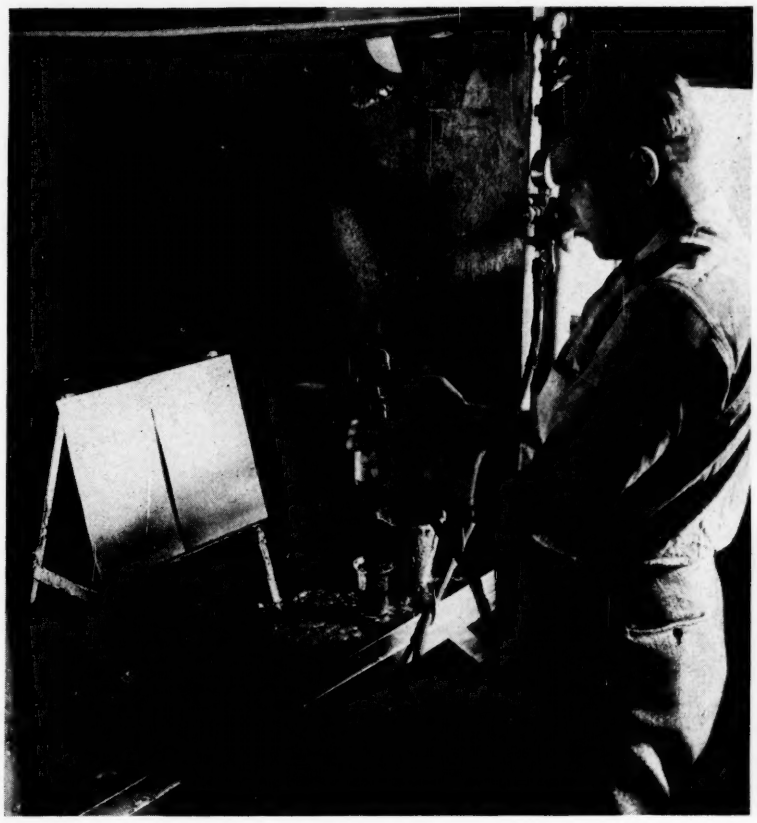

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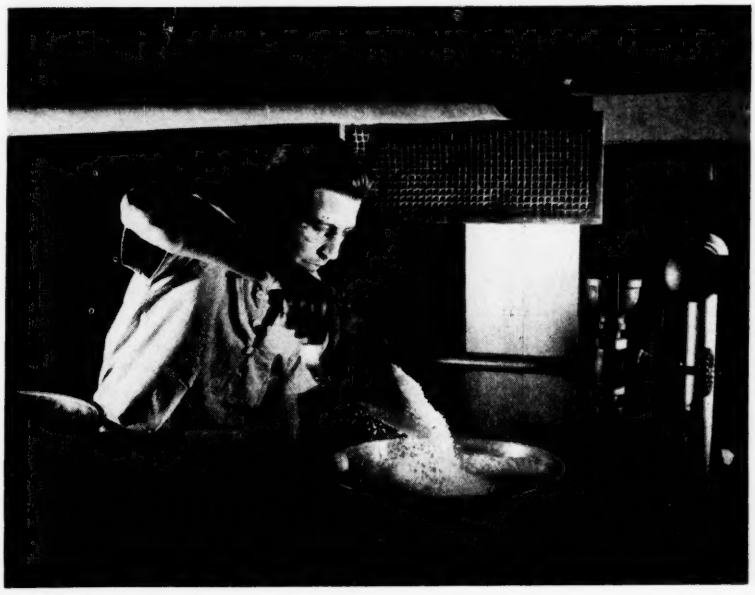
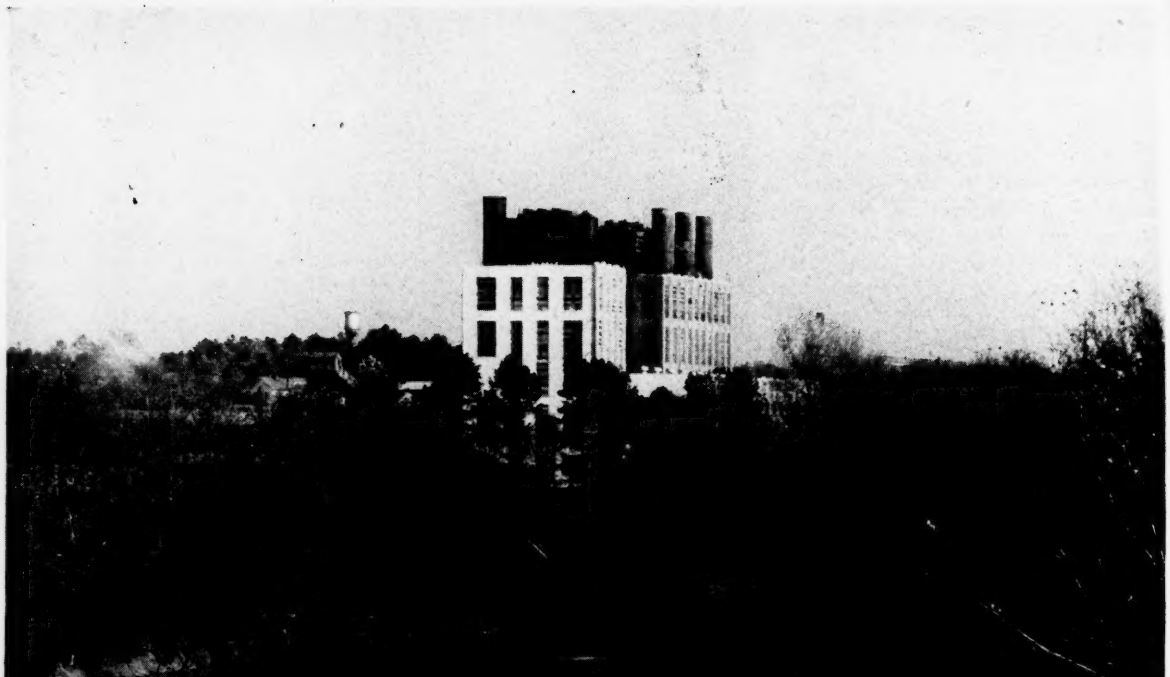




THIRD UNIT MAKES ATKINSON LARGEST POWER GENERATING PLANT IN GEORGIA

GEORGIA'S mightiest electric power plant at which the third unit was dedicated in December looms above the rolling countryside along the bending Chattahoochee at Cobb County's southern edge. Observed from a distance, Plant Atkinson stands like a silent giant in a quiet rural scene. Only when close upon it do you hear the steady drone that voices the tremendous activity within.

The structure is massive. Into it went 4,600 tons of structural steel and 2,600,000 brick. The window area totals 34,000 square feet. The measurements are prodigious. It is a gigantic factory, with electricity its product. Yet when you stand just outside the front entrance and gaze upward, the plant resembles a handsome skyscraper. It is as neat and clean as a modern city office building.

Here, in a bewildering complexity of whirling machines, roaring fans, intense flames and rushing steam, kilowatts are born — silent, unseen kilowatts that can leap hundreds of miles in an instant to perform their multiple tasks. To the layman, the intricacy and vastness of the equipment suggest some herculean, secret process. Yet the fundamental principle of the plant's operation is simple.

Plant Atkinson burns coal or natural gas to heat water and convert it into steam. That is the first step. Then the steam surges against the blades of a turbine, causing its shaft to revolve rapidly. The latent energy unlocked from the fuel by fire has now become mechanical force. Mounted on the other end of the fast-spinning turbine shaft is a powerful electric magnet which rotates within a circular series of wire coils, producing an electric current. This completes the process. Mechanical energy has been transformed into electricity. The only mystery about it is the mystery of electricity itself.

The seeming complexity is due to the immense scale on which this three-step process is carried out, and to the numerous engineering refinements that are added to increase efficiency. Besides the furnaces, boilers, water and steam pipes, turbines and generators, which are the basic equipment, there are superheaters, draft fans, air preheaters, coal pulverizers, evaporators and other devices for better operation.

In its present size, Plant Atkinson is actually three power plants. Each 100,000 horsepower unit is a complete generating station. All the

Top of Page—Plant Atkinson, greatest power plant in Georgia and one of the largest in the Southeast, has a capacity of 300,000 horsepower. Its three big turbo-generators can produce 4,500,000 kilowatt-hours of electricity daily. The plant's boilers are as tall as a 10-story building and have a combined capacity of 2,000,000 pounds of steam, consuming 50 carloads of coal daily, or natural gas when it is plentiful.

equipment installed in one unit is duplicated in the others. But the three units are combined in operation to work as a single giant of power production.

The plant rises 128 feet above the ground, as tall as a 12-story office building. It is a long elevator rise to the top floor. If you climb still higher, up the stairs to the roof, you have a splendid view of the surrounding country.

Below, from the rear of the plant, stretches a mountainous coal pile, normally kept at about 250,000 tons —sufficient to operate all three units for 100 days. Looking at the great black heap and recalling that soot is usually associated with coal burning, you may wonder how Plant Atkinson can be so clean. It is because the combustion of fuel in the furnaces is nearly perfect and practically all of the fine ash rising in the exhaust gases is caught by precipitators before the gases pass upward through the stacks. The precipitators are the bulky objects on the roof. They contain electrically charged plates to which the ash adheres.

At the near side of the coal pile is the new dumper, which can turn an entire railroad car upside down and empty it at one time. From the dumper runs an endless-belt conveyor in an enclosed, ramp-like structure. Midway is the coal crusher house, where the fuel is crushed to about one-inch size and then either moved to the pile or taken immediately into the plant for use.

The conveyor enters the plant at an upper level and runs inside along the whole length of the building, automatically dropping the coal into the immense bunkers that extend three floors below. From the bunkers the crushed coal drops to the battery of pulverizers on the ground floor. These are big mills that grind the coal to a fine powder, each at the rate of 252 tons a day. They are driven by 300-horsepower motors. A fan connected with each pulverizer blows the powdered coal up to the burners and into the furnace, where combustion is instantaneous.

On the top floor the visitor sees the big draft fans and the ducts leading to and from them. At one side is the induced draft fan, driven by a 1,250 horsepower electric motor at a speed of 710 revolutions per minute. This fan, having a capacity of 350,000 cubic feet per minute, sucks the gases from the furnace through the air preheaters so that they pass through the precipitator and out the stack.

Toward the center of the room is the forced draft fan. This takes air at room temperature and forces it through the preheaters, where the furnace gases raise it to a temperature 550 degrees. The heated air then is driven into the furnace through the burners three floors below, causing a powerful draft that improves combustion of the fuel. The combined effect of the induced and forced draft fans is a violent swirling motion of the flames in the furnace. Driven by a 600 horsepower motor at 885 revolutions per minute, the forced draft fan can deliver 210,000 cubic feet of air per minute.

In the same room are the de-aerating heater and storage tank. By means of a steam jet, the de-aerator removes the air from the distilled water that is to go into the boiler. This precaution prevents corrosion in the boiler tubes. In the process the water is heated to 310 degrees. It then runs into the storage tank, which holds 105,000 pounds of water.

The gigantic boiler and furnace reach from the next to the top floor down to the ground level, the height of a 10-story office building. Inside the furnace the temperature amidst the swirling flames is 2,600 degrees. The boiler consists of a multitude of strong steel tubes through which the water passes in its conversion to steam. Heating area of the tubes in the one boiler totals 9,789 square feet.

The steam reaches its highest temperature in the superheater, a section of the boiler utilizing hot furnace gases to give added heat. Leaving the boiler at a temperature of 900 degrees and a pressure of 940 pounds per square inch, the steam descends through big insulated pipes, or steam lines, to the turbine on the ground floor. The boiler can produce 600,000 pounds of steam per hour.

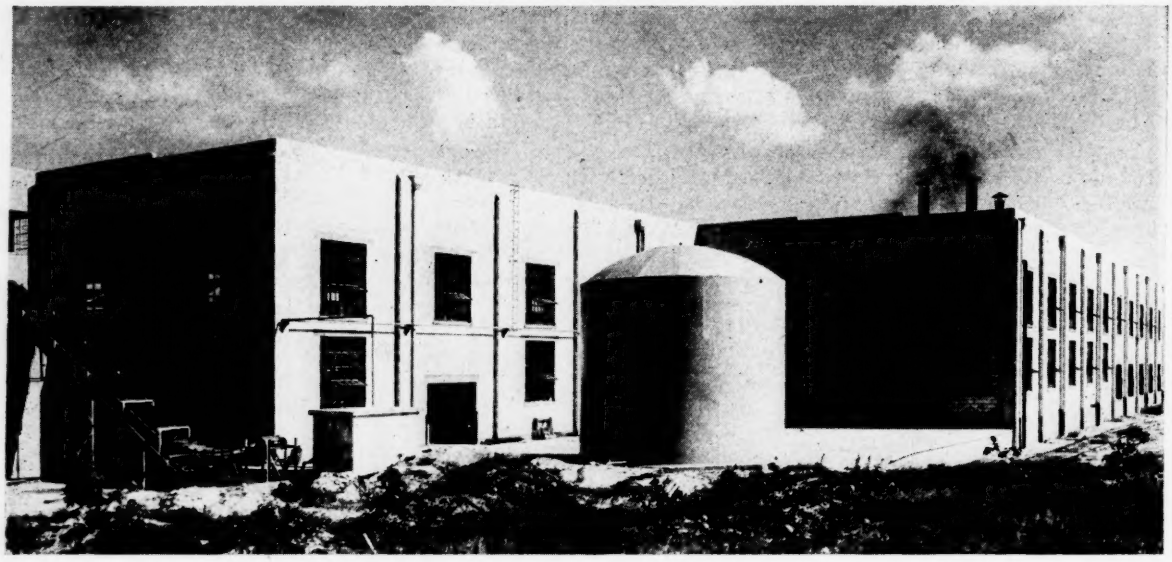
On the third level above the ground are the four burners, one at each corner of the huge boxlike furnace. Through these burners the coal is blown after being ground to a powder-like flour. When burning coal, the new unit consumes 720 tons or about 15 carloads each day, and the entire plant uses 2,470 tons or about 50 carloads—the load of a long train of coal cars.

The burners are also equipped to use natural gas when the supply is available after the needs of other gas customers have been met. Plant Atkinson burns coal mainly in the winter months and gas during warm weather. When operating on gas,

(*Continued on page 154*)

PRINCIPAL CONTRACTORS FOR PLANT ATKINSON No. 3 UNIT

General Contractor—Georgia Power Co.
Boiler—Combustion Engineering Co.
Turbo-Generator—Westinghouse Electric Corp.
Condenser—C. H. Wheeler Co.
Switchgear—2300 volt by Westinghouse Electric Corp.
500 volt by I.-T.-E. Circuit Breaker Co.
Fans—B. F. Sturtevant Co.
Precipitator—Research Corp.
Deaerating Heater—The Elliott Company
Structural Steel—Virginia Bridge Co.
Insulation—Philip Carey Co.
Transformers—General Electric Co.
Motors—General Electric Co.
Oil Circuit Breakers—General Electric Co. and Westinghouse Electric Corp.
Feed Water Heaters—Westinghouse Electric Corp.
Boiler Feed Pump—De Laval Co.
Engineering Design—Commonwealth and Southern engineers.



CITRUS COOPERATIVE EXPANDS

FLORIDA Citrus Canners Cooperative, Lake Wales, Fla., enterprise whose sales have grown to $7,000,000 yearly since its organization in 1930, is now pushing a $500,000 expansion program, as well as replacing a large warehouse destroyed at a loss of $750,000.

The Cooperative is a grower-owned organization with thirteen affiliated packing members, each of whom controls large acreages of groves and operates a fresh fruit-packing house. Total volume under such control is around eight million boxes, approximately one-half of which is processed at the Lake Wales plant. The number of growers is around 2,500; the number of acres about 50,000.

Packed under the brand of Donald Duck, famous Walt Disney cartoon character, the plant's output includes canned orange juice, grapefruit juice, blended orange and grapefruit juice, orange concentrate and sections of both oranges and grapefruit. The products are packaged in various sized tin cans and distributed nationally.

The plant is the largest industry in Lake Wales. It is headed by Harold S. Norman and employs in the neighborhood of 475 workers. A larger output of canned fruit sections is part of the current program. During the war years large quantities of the output was regular juices and concentrates for the armed forces and lend-lease. The average season is from October to June.

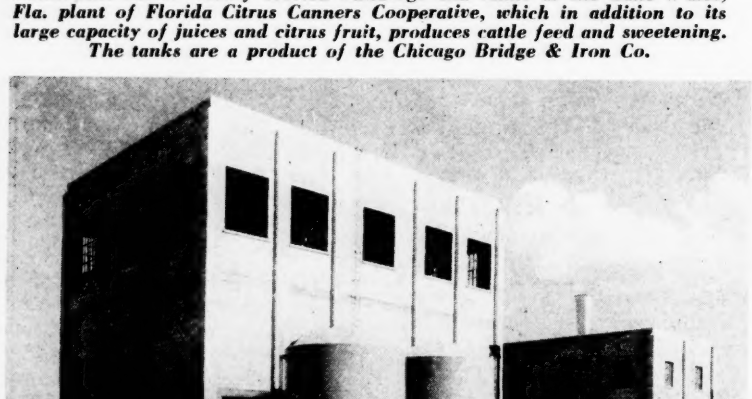
Disposal of wastes, peel and seeds has resulted in by-product operations which produce 8,000 tons of citrus pulp cattle feed and 6,000 tons of citrus final syrup, a molasses like sweetening for cattle feed. Two plants for producing such by-products are operated by the cooperative, according to M. A. Stephenson, production manager.

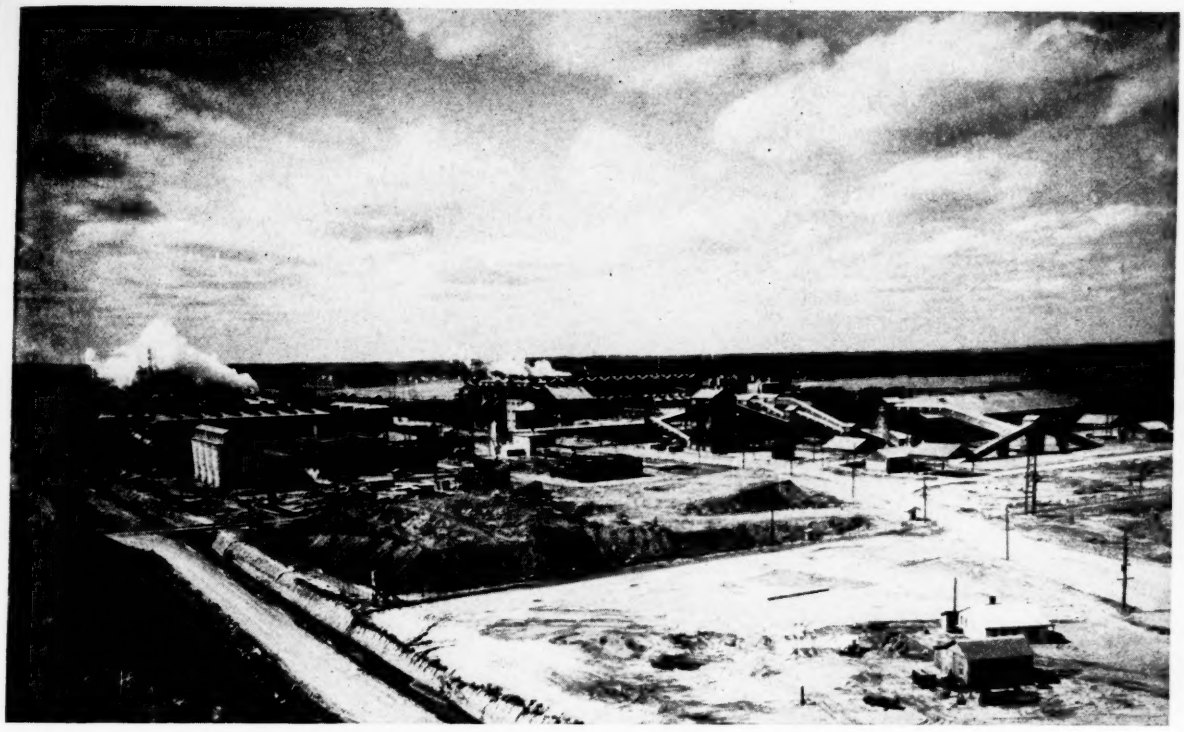
On a daily run of 30,000 boxes of fruit — 1,300 tons — there remains about 650 tons of waste. This is chopped in hammer mills, limed and pressed by large mechanical presses. Dried in a series of 60-foot rotary fire and steam tube dryers to about six per cent moisture content, the citrus pulp cattle feed is cooled and placed in 100-pound bags.

During the press operations a large volume of liquid is obtained with a solids content. This press liquid, as it is called, is heated and stored in two 30,000-gallon tanks.

(*Continued on page* 156)

Above and below—Newly erected buildings and tanks at the Lake Wales, Fla. plant of Florida Citrus Canners Cooperative, which in addition to its large capacity of juices and citrus fruit, produces cattle feed and sweetening. The tanks are a product of the Chicago Bridge & Iron Co.





Arkansas aluminum plant, showing power house and sinter plant.

Reynolds Leases Plants in Arkansas

REYNOLDS Metals Co., operator of more than 40 plants throughout the United States, will lease two government-owned plants in Arkansas—one the Hurricane Creek alumina plant and the other the Jones Mills aluminum reduction plant.

Both plants will be leased for five years, according to officials of the Reconstruction Finance Corporation. Under the terms of the agreement, the Company will lease two of four pot lines of the aluminum reduction plant and the entire alumina plant.

Both leases are based on "use value," which in the case of the Jones Mills plant is placed at $13,370,000 and for the Hurricane Creek project, $27,300,000. Rental for the first year is set at four per cent of the part of the Jones Mills plant being used, the figure to increase one per cent each year.

Rental for the Hurricane Creek plant will be based on four per cent of an amount which bears the same proportion to the "use value" that actual production bears to the plant's rated production capacity say R. F. C. officials. As in the case of the Jones Mills plant, the percentage will be increased by one per cent until it reaches eight per cent in the fifth year.

The minimum payment to the government will be over $6,000,000 and the maximum payment, approximately $12,000,000, with an option to purchase at the expiration of the lease period. Reynolds Metals will pay all real estate taxes and insurance costs and furnish the needed working capital and assume any losses that may accrue from the operations.

Emphasis was placed on the Reynolds announcement that no government subsidy of any kind is involved. The lessee has agreed to sell alumina produced at Hurricane Creek above its own needs to others at cost plus six per cent.

The Hurricane Creek plant is described as the largest and most modern alumina plant in the world with an annual capacity of 1,555,000,000 pounds. The Jones Mills plant, 20 miles away has a rated annual capacity of 144,000,000 pounds of pig aluminum. Its power plant, however, is reported to have a capacity to generate electricity for half that amount.

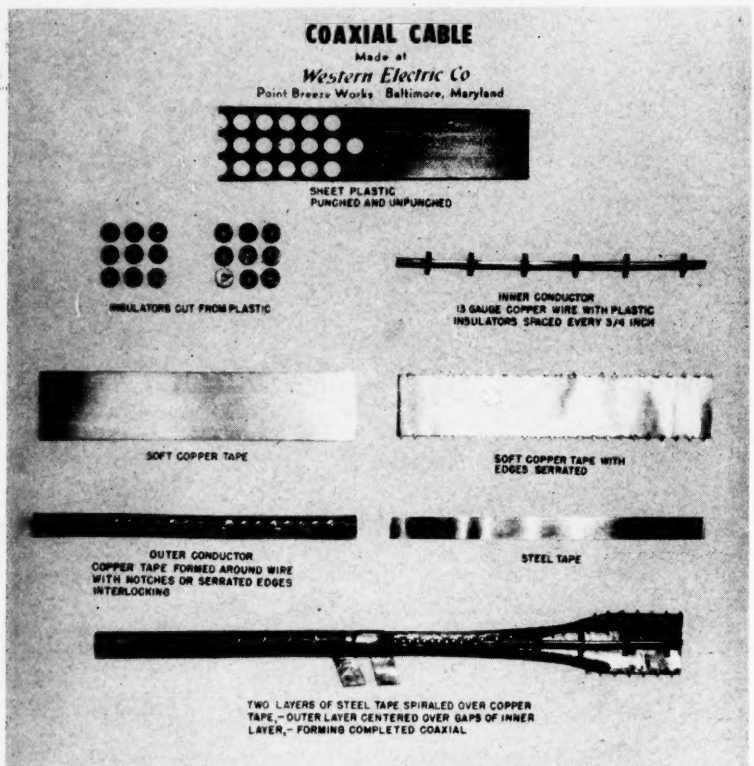
Reynolds plans are for an annual production of 72,000,000 pounds of aluminum ingot at the Jones Mills plant, which when added to the capacities of the company's reduction plants at Listerhill, Ala., and Longview, Wash., will boost the company's output to 237,000,000 pounds annually, or a large percentage of the domestic output of the featherweight, silvery metal.

Both the Jones Mills and Hurricane Creek plants have been shut down for more than three months. Reopening of the two operations will provide employment, directly and indirectly, for thousands of men and women, it is pointed out by R. S. Reynolds, president of the leasing organization. Employees on the payroll of the two Arkansas plants averaged 1,100 during the period of war production.

The Jones Mills plant occupies

(*Continued on page* 164)

MAKING TALK CHEAPER



Left—Parts and construction of coaxial cable, new high capacity conductor and essential in distance television transmission.

by

Carl D. Hart

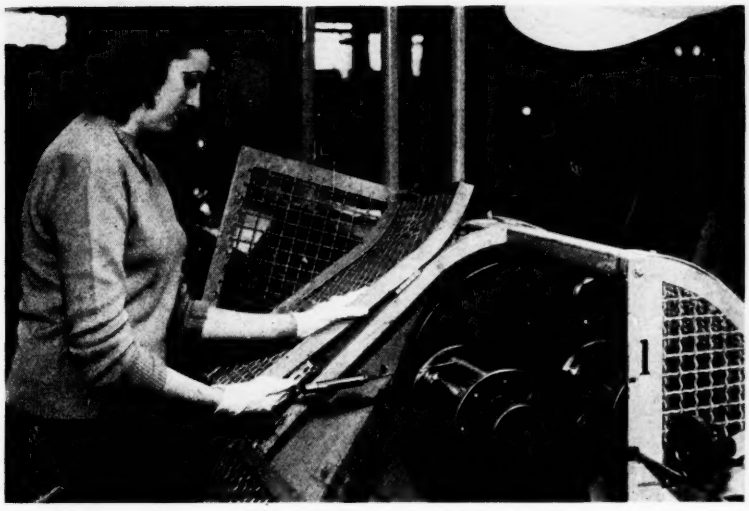
ONCE upon a time a telephone circuit consisted of a single wire with a return through the ground. As this common ground return had disadvantages from the standpoint of noise, interference, etc., a second wire was added and the complete metallic circuit came into being. This type of circuit was used exclusively in the earlier long-distance lines, whether cable or open wire, and is still the standard for all subscriber telephones.

To obtain additional inexpensive communication facilities a third or phantom circuit was introduced for each two pairs of wires. This was accomplished by twisting two pairs of wires about each other to form a quad. Each pair could then carry an individual conversation while a third conversation could be transmitted simultaneously by using both wires of one pair as one side of a circuit and both wires of the other pair as the return. This third circuit was called a phantom circuit because it was superimposed on the other two and enabled three complete circuits to exist where there had previously been but two.

As the demand for long distance circuits grew, the engineers of the Bell Telephone Laboratories attempted to make each pair of wires do more work. As most pairs of wires can be arranged to carry bands of frequencies considerably wider than is necessary for one conversation, they were able to obtain several conversations on each pair of wires by dividing the total frequency band into several bands. The frequency of an electric current is the number of times per second that it changes from positive to negative and back to positive, just as the frequency of a plucked violin string is the number of times per second it completes a full cycle of vibration. Recognizing that some of the high or low notes of a conversation will not be reproduced satisfactorily unless the circuit transmits a frequency band 3000 cycles wide, the engineers were successful in putting four conversations on one pair of wires by arranging the pair of wires to transmit a band of frequencies wide enough adequately to handle them.

To illustrate how this circuit, called "C Carrier," works let us compare a conversation traveling along a circuit with an automobile traveling a highway. As an automobile is, say seven feet wide, so 2700 cycles is the width of the frequency band which will give a satisfactory telephone conversation. When only one conversation was carried on each pair of wires it was as though a thirty-foot highway were being used for the passage of only one car. When three 3500 cycle bands were adopted for carrying three conversations, it was as though three ten-foot paths were allowed for three seven-foot automobiles, leaving sufficient margin on each side to prevent interference with other cars or other conversations. In order to send three conversations simultaneously on one pair of wires various improvements had to be made in the methods and materials used in transmission, just as an uneven highway would have to be widened, straightened and

Right—One of many inspections made during manufacture of coaxial cable at Point Breeze Works of Western Electric Co. The inspector is using a tension gauge to check tension on the steel tape which provides a protective covering over the copper tube of coaxial cable.



smoothed out before it could handle a heavier flow of traffic.

The terms "J Carrier," for open wire lines, and "K Carrier," for cable circuits, came into being when the engineers succeeded in placing twelve circuits on two pairs of wires (one pair for each direction) by increasing the frequency band.

Again, it was necessary to make a number of improvements in the transmission characteristics of the line. This was done by making each pair of wires more uniform, and by decreasing the nonconformity in twist between the two pairs of a quad. As a result inductive effect or cross talk between the pairs was reduced. Small amounts of unbalance in circuits, unimportant in the lower frequencies, became increasingly serious in carrier circuits with high frequencies in much the same manner that small unevennesses in a road, not serious when driven over slowly, become important when traveled over at high speed. To achieve the desired uniformity, great care had to be taken in the construction of these circuits.

For economic reasons, it became desirable from time to time to develop systems which would carry more and more conversations. By multiplying 4000 cycles, the width of the desired conversation band, by the number of circuits desired, the total frequency band necessary to be transmitted was determined. For instance, if it were decided to transmit 250 conversations simultaneously, a band 250 times 4000, or 1,000,000 cycles per second, would be required. Because of interference and other factors, it has not been possi-

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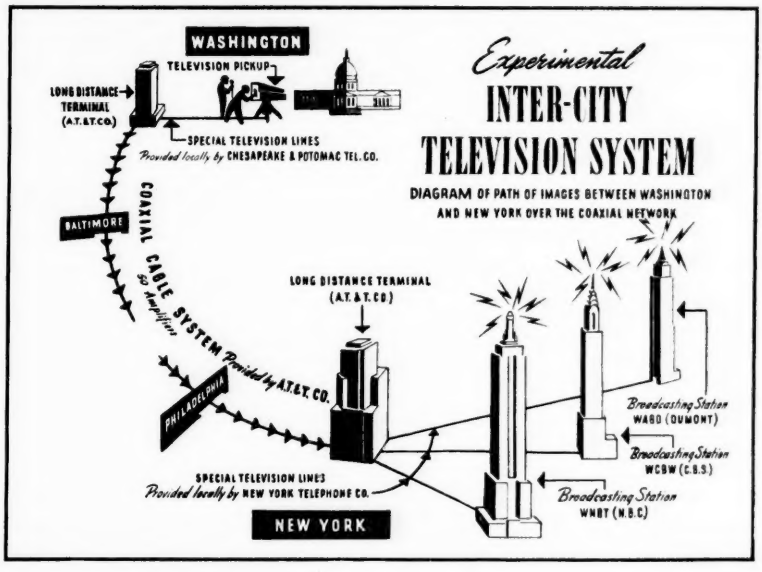
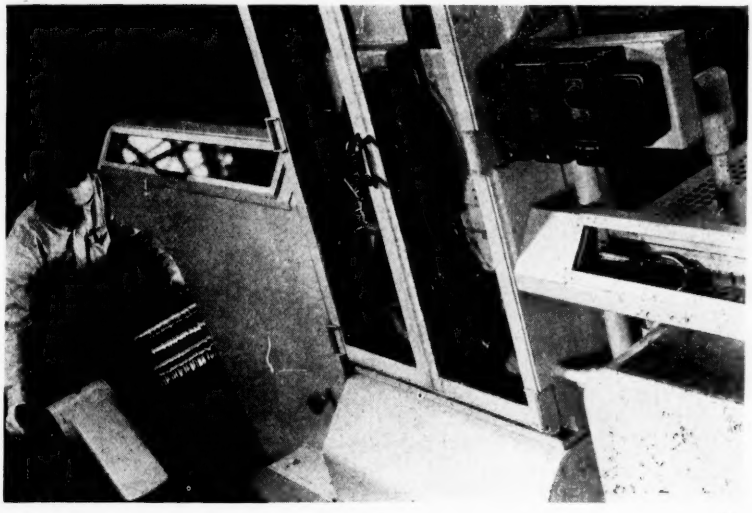
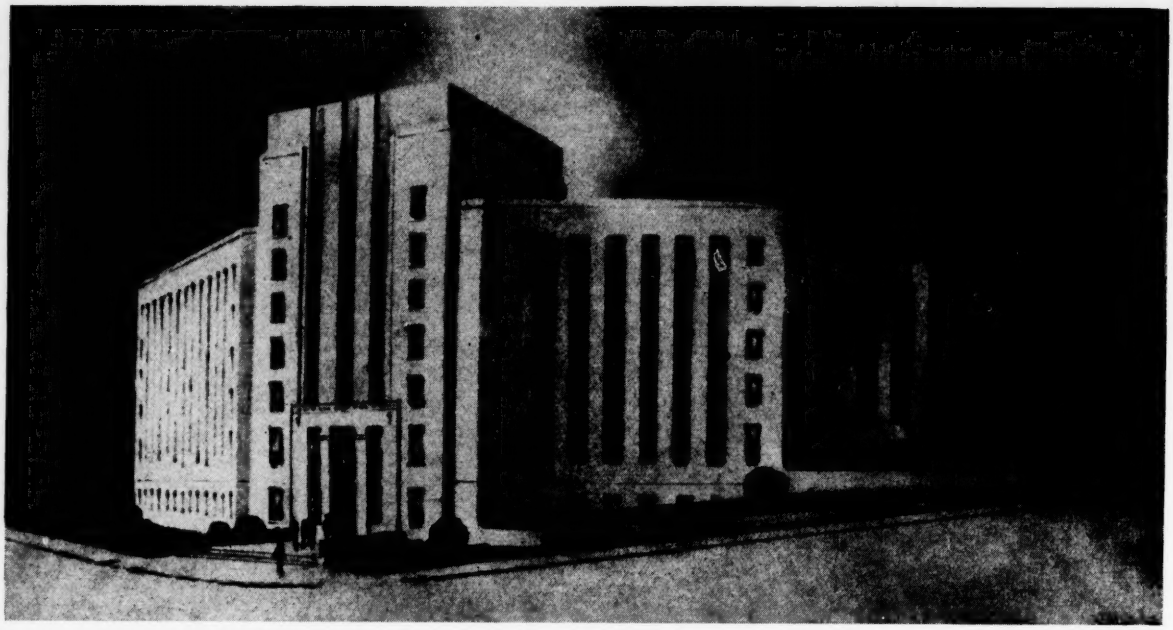




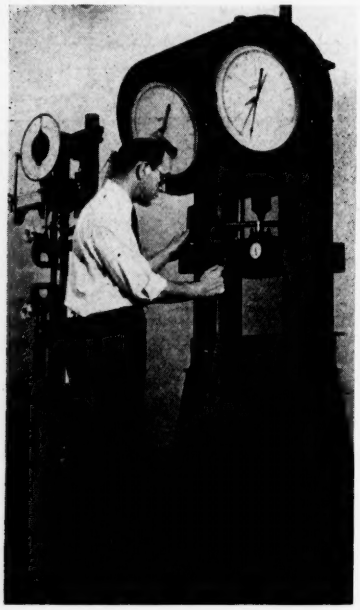
Right—The operator has just placed a spool of wire into the supply stand of a coaxial unit machine. The course of this wire, which forms the central conductor of a coaxial unit, can be traced through the machine as it enters between two large notched discs and emerges with regularly spaced insulators.



Above—Proposed Southern Research Institute building, part of the $2,500,000 expansion program of the Birmingham organization.

RESEARCH FOR SOUTHERN INDUSTRY

FUTURE industrial progress in the South will depend upon the creative imagination of its industrialists. This imagination will need the support of the scientific research now available at the Southern Research Institute at Birmingham. The Institute, initially financed by a forward-looking group of business and industrial leaders, has been in active operation since April, 1945, and in that limited time has so amply demonstrated its worth that its directors have endorsed an expansion program of $2,500,000 for additional buildings and equipment.



Left—Operating precision tensile testing apparatus in air conditioned room.

Temporarily housed in an old southern mansion in the highlands section of Birmingham, the Institute performs laboratory research for a sponsoring industry on a basis of actual cost of the project. The industrial or agricultural sponsor states his technical problem and the objectives which he hopes to attain through research. The Institute's staff of scientists begins work on the problem and pursues it to its termination. All results — discoveries, patents and inventions — belong wholly to the sponsor of the particular project involved.

The Institute's laboratories, and there are now twenty, are already equipped with the best scientific facilities and instruments, while a one-story factory building nearby has been rented to house the engineering research division. Since the modest beginning in April, the Institute reports twenty sponsors of research projects with signed contracts in excess of $200,000.

Projects deal with such typically southern subjects as cotton textiles, cottonseed products, citrus fruit by-products, peanuts, metallurgy and the mechanical arts. Existing facilities are overtaxed and the stable and carriage house of the old mansion

Below—Metallurgist William M. Austin studying progress of corrosion of submerged specimen.

Right—Paint panels being subjected to accelerated weathering tests are studied by Dr. Fred C. Cox, Jr., the institute's plastics chemist.

have been converted into a laboratory annex equipped with a pilot plant area, a metallurgy laboratory and an air-conditioned textile testing room. It is to overcome this shortage of space and to greatly widen the scope of the Institute's activities as well as to procure new equipment that the directors decided on the expansion program at this time.

The men who will contribute this sum will be the gainers, and in more ways than one. Not only will they be furthering the over-all industrial welfare of the section, but they will aid science in the attainment of its highest goal — the welfare of human beings. Industrialists whose problems are solved in the laboratories of the Institute will feel an upward trend. Upward trends produce more employment in manufacturing establishments with consequent increased income for highly skilled workers. Inevitably merchants, bankers, agriculturists, professional men — in short, people in all walks of life, would feel the benefits wrought by the Institute's men of science. Already self-sustaining, the Institute offers, through its expansion plans, greater opportunities than can be readily portrayed here.

Scientific research gained its greatest impetus during the war, but it is a known fact that annual expenditures for this work had reached the total of $300,000,000 prior to Pearl Harbor. Most of this vast sum was expended by the great industrial organizations, while the smaller manufacturers had to rely on rule-of-thumb and hit-or-miss methods.

This highly competitive era demands intense scientific research of any industry that is to survive. But the cost of scientific research has been prohibitive to all but the largest concerns. The Southern Research Institute and its plan of operation overcomes this difficulty and makes

(Continued on page 142)

Below—Left—Dr. Carl Bordenca determines optical properties of a product from Florida citrus orchards. Dr. J. F. Vincient, biochemist, and L. Z. Szabo, bacteriologist, work on the microbiology of dairy products in the picture at the right.

FAIR EMPLOYMENT PRACTICE

by

George H. Fisher

Chairman, Labor Committee
American Society of Industrial Engineers

FOR almost a century America has fumbled with the problem of dealing with the negro who became a social factor after the civil war. And now, after all these years of working constructively toward a gradual and natural dissolution of the matter we are suddenly advised by our new school of labor highbrows that the solution lies in first boldly dragging the problem out into the open—and then discreetly denying that it exists! With unflinching double-talk our new crop of labor intellectuals seeks to convince us that the negro problem in industry must be faced realistically and firmly by legislation—and in the next breath that we must quit hurting the negro's feelings by treating him as a "special problem."

The fact of the matter is that prior to this "social guinea pig" era in the labor movement most unions actually did face the negro problem realistically—not by trying to force the negro or negro legislation upon prejudiced and unreceptive white workers, but simply by giving the negro a chance to carve out a place for himself on his own merits.

Mike Friel, business agent of Local No. 7, was a practical man. Although no college graduate like many of his lofty-browed successors, he differed from some of them in that he had sense enough not to butt his head against a stone wall. When a white southerner refused to work alongside a negro he simply changed one of the workers to a new job—just as a farmer separates a horse and a mule because they refuse to pull together. It seemed like such a simple, common-sense thing to do that Friel and his contemporaries didn't feel called upon to defend the practice, as he would have to do if he were alive today.

In those days negroes gradually gained acceptance in union circles on an equal footing with whites as soon as they had a chance to demonstrate that they were equally industrious, skillful and dependable. But the whole point here is that the element of *force* was not present as it is today. The friendly white worker who had *not* been emotionally or historically conditioned against the negro was always on hand to give the latter the "break" that he needed. The whole matter of learning race tolerance was a natural, psychological process rather than one of trying to sweep back the tide with a corn broom.

Negroes who excelled whites at any particular job soon came to be applauded by fellow workers on the basis of their achievement, without regard to the color of their skin. But the strange notion of *legislating* "fair employment practice" into existence would seem as ludicrous to the competent, self-respecting negro of that day as it does to those of today.

The old-school unionist did not try to mix water and oil merely to prove a point. If he found an oil that would mix with water all well and good. But unlike some of our modern, well-educated theorists, ye old time business agent was scientist enough not to try to force elements together which were naturally antagonistic.

What is the reason behind all this force-feeding of negroes and negro legislation into unharmonious industrial environments? Upon close observation it becomes apparent that it is aimed not at racial tranquility but at racial discord and labor flare-ups. It is a deliberate effort to arouse class-consciousness among negroes—a relic of the old prewar communist party line in America.

Soon after the Russian Revolution, Lenin pointed out to American Communists the golden opportunity they had of drawing class lines between whites and negroes. The idea was to gain allies among the negroes and to bolster the feeling that classes actually exist in the United States just as in Europe and Asia. And in their customary blind obedience to the Kremlin the American Communists promptly began to ignore all the progress organized labor had previously made toward industrial assimilation, and began their irrelevant and stupid attacks upon southern "Jim-Crowism." And just as the Communist will label all anti-communism as "Fascism" so he also labels all racial segregation as "Jim-Crowism."

The Kremlin's habit of blundering into political quagmires in America by hitching their wagon to American labels concocted out of American idiom is of course well known. But when they proclaimed, as their social ideal for America, the antithesis of "Jim-Crowism" (and, as usual, dragooned the floundering American liberals unwittingly along with them by the button-hole) they committed a semantic error equal only to their embracing of "American Democracy" in 1938.*

Obedient to the Kremlin's directive, the American Communists went into the deep South, observed the "class nature" of Jim-Crowism, and forthwith decided that here was just the label they required in order to exploit the negro on the pretense that they were fighting for his rights. Working on the supposition that southern Jim-Crowism is "discriminatory" they immediately branded *all* forms of segregation as discriminatory.

Race is the only basis upon which Nature herself segregates the peoples of the earth. For the sake of compatibility society segregates according to age in our schools, according to sex in rest-rooms, according to religion in churches, according to occupation in union halls, according to political beliefs in parties, according to height, weight,

(*Continued on page* 140)

*This was the year in which the directive went out from the Kremlin to communists all over the world to "cooperate with the democratic elements in your own respective countries." With regard to America, Marshal Stalin indicated that this must be interpreted: "cooperate with the Democratic Party" (naively confusing an arbitrary party-title with a basic political ideal). The error led American Communists into a long series of tactical blunders which served finally to pin the red herring permanently to the tail of the Democratic Donkey.

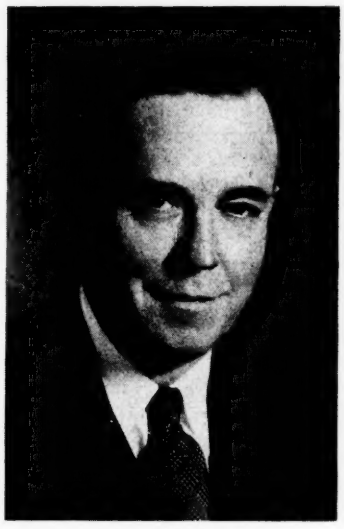
Big Lumber Treating Plants Slated for South Carolina, Maryland

AS the initial step in a planned expansion program, J. F. Linthicum, president of the American Lumber and Treating Company, announces that the company's first postwar wood-processing plant will go into operation early in 1946 on a 140-acre tract at Florence, South Carolina. Construction of this plant —representing a total investment of nearly $750,000—in the industrial South is the result of a decision to relocate and more than double the facilities of a plant formerly operating in Massachusetts.

Selection of Florence for the site of this latest link in the company's chain of nine production units was made after an 18-month regional study by the organization's postwar planning committee, assisted by local and state development groups, of factors touching on rail shipping facilities, freight rates, labor supply, water and power facilities, proximity to forest-products sources, and the postwar prospect for increasing demand for treated lumber in construction throughout the Southeast. The postwar planning committee, appointed two years ago and composed of representative officials of the company, was charged with determining and analyzing the major problems confronting efficient, expanded production during and after the reconversion period.

Only treating company which has plants on both seacoasts, American Lumber and Treating Company has five plants in the forest regions of the South—at Crossett and Fordyce, Ark., Shreveport, La., Gainesville, Fla., and Florence, S. C.—to utilize Southern pine and other species that react more favorably to the various chemical treatments than do some woods.

In announcing the new plant, Mr. Linthicum, who directs company operations from the general office in Chicago, points out that "The operation of this plant—alloying wood with chemicals to produce wood that resists fire, termites and decay—not only will assist lumber to enter a variety of new markets, but will help



J. F. Linthicum

to advance proper utilization of forest products. Southern lumber manufacturers, industrial groups, and state officials have taken the lead in perpetuating our forests. Like continuous yield through selective logging, expansion of facilities to conserve wood through chemical treatment is another step in the program to protect and develop the timber crop."

Mr. Linthicum, who was instrumental in the organization of American Lumber & Treating Company in 1934, had previously been associated with several mining, heavy chemical, and metal producing companies. He left the Aluminum Company of America in 1937 to become executive vice-president of the wood-treating company, and was elected president of the latter in 1938. He is a graduate of St. John's College, Annapolis, Md., and a member of the Linthicum family of Maryland.

Production of the Florence plant will be based on three processes for impregnating railroad ties, telephone and telegraph poles, wharf, dock and bridge foundations and structural lumber for industrial plants, farm buildings and homes. Coal-tar creosote is forced into railroad ties, telephone poles and foundation piling to protect the wood against decay, dry rot and termites. It also guards wood in seawater against shipworms and other borers. Wolman Salts preservative, a chemical-salt compound, is used in the treating process where a clean, odorless, paintable product is desired. Minalith fire-retardant is applied to lumber to be used where the fire hazard is great, as in garages, airplane hangars, railroad shops, etc.

Chemical treatment of wood will be performed at the Florence plant in two 96-in. vacuum-pressure steel cylinders, one 55 ft. and the other 93 ft. long; plans call for a third cylinder to be added later. Lumber, timber, and round stock to be treated will be loaded on tram cars and moved into these cylinders over standard-gauge track.

The treating process, in general terms, consists of applying heat and pressure to obtain a predetermined penetration and retention of chemical within the wood. During this process various gauges, charts, and control apparatus tell technicians exactly what is going on inside the sealed cylinder, allowing pressure and temperature adjustments so that the physical properties of the wood remain practically unchanged.

Located on a 140-acre site bounded on the south by the Atlantic Coast Line and on the west by the Seaboard Air Line, the plant will be able to handle transit treating over both railroads and their connections. Buildings housing the treating cylinders and other processing equipment will occupy a relatively small area, since modern treating equipment can process up to two freight carloads of lumber at a time. Most of the acreage will be devoted to seasoning and storage yards for bulky material like railroad crossties, telephone poles, and heavy timbers. When completed, the plant will have 10 miles of standard gauge track in service.

The new plant will require between 120 and 170 new employees

(*Continued on page* 138)

Southern Industrial Expansion

American Telephone and Telegraph Co. and Southern Bell Telephone & Telegraph Co., plan new wires and cables from Atlanta to Miami to cost $476,000.

ALABAMA

Additions—The Avondale Mills Inc., spending $1,250,000 for new equipment and additions to plants at Sylacauga, Stevenson, Sycamore, Pell City, Lafayette, Alexander City and Birmingham.

BIRMINGHAM — Rails—Southern Pacific Lines, placed order with Ensley Mill of Tennessee Coal, Iron & Railroad Co., for 10,000 gross tons of steel rails, representing expenditure of $400,000.

BIRMINGHAM — Terminal—Warren Bus Lines, acquired site for future erection of bus terminal.

HUNTSVILLE — Textile Plant—M. Lowenstein & Sons, Inc., New York purchased Huntsville, Ala., textile plant and village property of Merrimack Manufacturing Co., of Lowell, Mass.

MUSCLE SHOALS—Plant—Reynolds Metals Co., Richmond, Va., signed contract with Tennessee Valley Authority to lease, with option to acquire, nitrate plant No. 1 at Muscle Shoals; will install machinery; output will be an aluminum product, probably a construction material.

PELL CITY—Building—Lowery Chevrolet Co., plans immediate construction of sales and service building, cost approximately $30,000.

ARKANSAS

FORT SMITH—Radio—The Arkansas Valley Broadcasting Co., Ada, seeking permission to operate radio station at Fort Smith; the High Point Enterprise Inc.

HELENA — Plant—Helena Cotton Oil Co., plans $250,000 plant to process cotton seed, by new solvent method.

LITTLE ROCK — Gas Lines—Arkansas Louisiana Gas Co., plans $700,000 expansion program to serve Greater Little Rock industry. Gas company has signed contract to serve the Arkansas Power and Light Company's new Cecil S. Lynch power plant at Rose City, cost $3,500,000 and North Little Rock's new industrial section; will lay new from Benton to a point south of Little Rock across Granite Mountain to Sweet Home.

LITTLE ROCK—Warehouse—Cash Wholesale Co. let contract at $76,000 for construction of new warehouse.

OSCEOLA — Expansion—Osceola Products Co., purchased The Purina Cotton Mills, and plan to expand mill's productive capacity.

RECTOR—Mill—W. J. Hurst and Associates interested in establishment of a $100,000 soy bean oil mill.

FLORIDA

BARTOW — Plant—International Minerals and Chemical Corporation, completed negotiations for acquisition of phosphate rock deposit near Bartow.

JACKSONVILLE—Building—National Container Corp., Southern Container division, constructing, estimated cost $100,000.

JACKSONVILLE — Building—San Marco Motors let contract at $100,000 for auto sales building.

LAKE HARBOR—Plant—Florida Fuel and Ice Co. and Atlantic Coast Line, started work on ice and pre-cooling plant on a 15-acre site.

MIAMI—Addition, Etc.—Kraft Foods Co., Chicago, Ill., let contract for additions and alterations to existing building, cost $22,556.

MIAMI — Addition — Southern Bell Telephone and Telegraph Co. let contract at $50,000 for addition to dial office here.

MIAMI — Plant—George A. Ruffe, Coral Gables, will construct aluminum fabricating plant, at cost of $17,000.

MIAMI—Warehouse—Guld Drug Sales Co. let contract at $50,000 for warehouse and showroom office.

MIAMI—Warehouse—A H. Ramsey & Sons, will erect warehouse at cost of $75,600.

OCALA—Addition—J. G. White Construction Co., New York, started on $250,000 addition to Florida Power Corporation's generating plant near Ocala.

PENSACOLA — Building—Newport Industries, Inc., let contract for laboratory building.

PENSACOLA—Terminal—Tucker Taxi Co., plans terminal at estimated cost of $35,000.

GEORGIA

ATLANTA—Factory—Consolidated Investment Co., will construct factory with day labor.

ATLANTA—Plant—Crown Cork & Seal Co., plans $2,000,000 plant here.

ATLANTA — Radio Equipment—Western Union Telegraph Co. plans installing weather-resistant micro wave radio telegraphic equipment in southeast.

ATLANTA — Transit Equipment—Georgia Power Co. has ordered 30 air-conditioned urban trolley buses, and 70 additional buses in which air-conditioning equipment may be installed.

AUGUSTA — Chemical Plant—Phoenix Oil Co., plans construction of plant to manufacture textile and sanitary chemicals and textile lubricants.

BRUNSWICK—Plant—Tide-water Plywood Co., let contract for $700,000 plywood plant.

COLUMBUS — Buildings—Muscogee Manufacturing Co., plans new buildings at cost of $250,000.

COLUMBUS — Expansion — Ledger-Enquirer, plans $300,000 expansion and development program, including installation of new, high-speed presses.

DALTON — Machinery—The Dalton Textile Corp., installing machinery in its new $30,000 building.

PORT WENTWORTH — Plant — Robert Gair Co., New York City, proposes pulp and paper mill, cost $8,933,000, to be followed by erection of a second unit within two years, costing $4,567,000 at Port Wentworth.

SAVANNAH — Equipment—The Central of Georgia Railroad, headquarters at Savannah, has ordered $25,000,000 worth of new rails, bridges, safety installations and rolling equipment.

KENTUCKY

FRANKFORT — Gas—The Kentucky Natural Gas Distribution Co. incorporated by J. R. Horrigan, Houston, Pres., with capital of $100,000.

LOUISIANA

HAMMOND—Factory—Valmy Garment Co., has broken ground for new factory building on Highway 51 south of Hammond.

NEW ORLEANS — Addition—Pittsburgh Plate Glass Co. has plans in progress for addition to present warehouse building; estimated cost $75,000.

OPELOUSAS—Rebuilding—John Dezauche, plans rebuilding feed plant, as soon as materials are available.

MARYLAND

BALTIMORE — Improvements—Baltimore and Ohio Railroad Co., plan $50,000,000 system improvements, including road beds and track strengthening, enlargement of facilities, etc.

BALTIMORE — Office, Etc. — Cambridge Iron & Metal Co., let contract for office and warehouse; cost $15,000.

BALTIMORE — Plant—American Can Co., New York, plans $6,000,000 plant, with approximately 20 acres of floor space.

BALTIMORE — Plant — Maryland Glass Corp., let contract for bottle manufacturing plant, cost $230,000.

MISSISSIPPI

GRENADA—Addition—Mayor and Board of Aldermen let contract for addition to City's Industrial Building; cost $75,000; to be occupied by Grenada Industries.

HOUSTON—Plant—Rice Stix Mfg. Co., St. Louis, has acquired 10-acre site for erection of garment plant; estimated cost $100,000.

LOUISVILLE—Plant—Plans completed for erection here of $225,000 plant building to house National Automotive Fibres, Inc., of Detroit, Mich.

MACON—Plant—Mrs. R. N. Henley has let contract for construction of bottling plant; estimated cost $15,000.

MISSOURI

KANSAS CITY—Addition— George A. Fox Products Co., let contract for addition, at cost of $45,000 including equipment.

KANSAS CITY—Expansion Aleron Manufacturing Corp., has acquired Midco Tool and Supply Co., will be increased to twice its present size and manufacture oil field equipment.

LEBANON—Plant—Chamber of Commerce interested in erection of furniture factory.

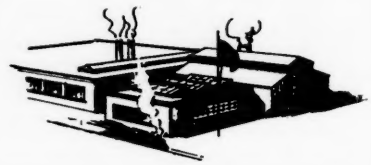
NORTH KANSAS CITY — Plant—Allen Chevrolet Co., erecting building; sales, service and office space; cost $100,000.

ST. LOUIS — Addition—Mississippi Glass Co., let contract for addition; cost $10,000.

ST. LOUIS—Additions—Klingbill R. E. Co., let contract for additions to factory; cost $12,000.

ST. LOUIS — Alterations—Smith-Scharff Paper Co., let contract for general alterations to warehouse and office building.

ST. LOUIS—Assembly plant—Ford Motor Co., Detroit, Mich., let contract for assembly plant.



ST. LOUIS—Building—Burger Inv. Co., let contract for auto motor rebuilding assembly and service station; estimated cost $50,000.

ST. LOUIS—Building—Charter Oak Stove & Range Co., will construct new building, at cost of $10,000.

ST. LOUIS — Factory, Etc. — Henry R. Weisels Co., let contract for factory and warehouse; cost $60,000.

NORTH CAROLINA

ASHBORO — Laundry Plant—White Swan Laundry and Dry Cleaning Co. incorporated; will erect new plant at cost of $55,000.

ASHBORO — Plant Building—McLaurin Hosiery Mill, installing circular knitting machines in new pant building.

BURLINGTON—Addition—Long Finishing Mill constructing $100,000 addition.

BURLINGTON — Expansion — Burlington Mills Corp. has let contract at $85,000 for expansion of offices here.

BURLINGTON—Hosiery—Sanders Hosiery —Sanders Hosiery Mills, incorporated by W. B. Sanders, and Associates, with capital of $1,000,000, wholesale and retail hosiery business.

CHARLOTTE — Addition — Larkwood Hosiery Co., plans expansion of plant, costing more than $200,000.

CHARLOTTE—Additions—newly organized Johnson Motor Lines, Inc., has acquired Davis Motor Lines, Inc. of Charlotte; plans additional terminals.

CHARLOTTE—Building—Building Service and Equipment Co. incorporated with capital of $50,000; offices and warehouse facilities for general construction operations.

CHARLOTTE — Building—Otto Hahn of Belmont Bakery, will construct new building at cost of $40,000.

CHARLOTTE—Expansion—Charlotte Lumber & Manufacturing Co., plans immediate expansion of plant facilities, total cost for $40,000.

CHARLOTTE — Expansion — Charlotte Observer, plans expending approximately $1,000,000 for expansion of present newspaper plant.

CHARLOTTE — Expansion — Foremost Farms Corp., Jacksonville, Fla., interested in expansion of facilities; seeking site for dairy products processing plant.

CHARLOTTE—Warehouse—Piedmont Cold Storage Co., let contract at $35,000, for warehouse.

CHARLOTTE — Yarns—Blackwelder Textile Co., incorporated by John A. Blackwelder of Cherryville, and Associates, with capital of $100,000; buy and sell yarns.

DURHAM — Improvements—Farmers Mutual Exchange, plans expansion of local freezer plant cost of $100,000; expansion of grain storage and mills to cost $40,000.

GREENSBORO — Locker Plant — Frozen Food Locker Co., let contract for freezer locker plant.

HICKORY — Hosiery — Southern Hosiery Mill, incorporated by P. G. Menzies, and Associates, with capital of $500,000, to manufacture hosiery.

HICKORY — Mill Addition—Ellis Hosiery Mill has let contract at $25,000 for addition to mill.

HIGH POINT—Hosiery Plant—O. S. McKenzie, erecting new building for Plymouth Hosiery Mill, Inc.

KERNERSVILLE — Expansion—Southern Silk Mills, spending $250,000 on plant expansion.

NORWOOD—Addition—Collins & Aikman Corp., filed plans for one story addition to plant, cost $80,000.

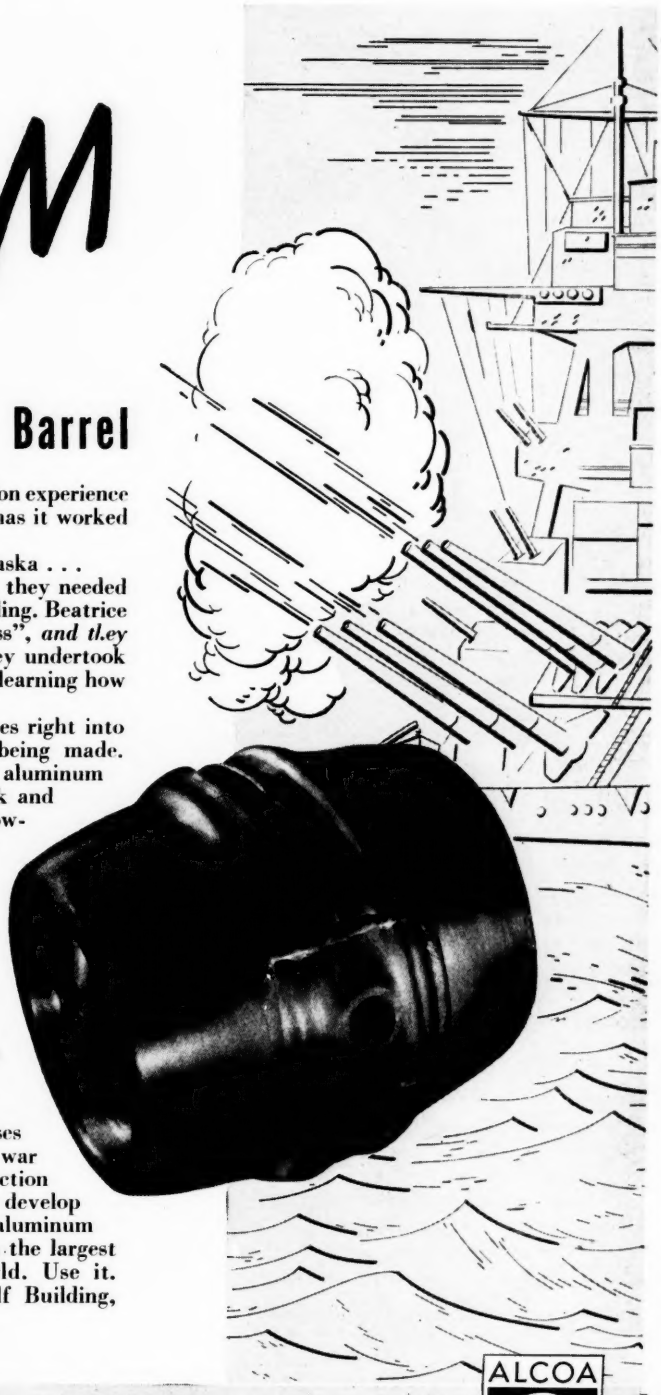
SPRAY—Expansion—Marshall Field & Co., spending $1,000,000 for expansion.

WHITEVILLE—Plant—Riegel Paper Corp., New York, having plans prepared, for contemplated pulp and paper mill in Columbus

(*Continued on page* 136)

HOW ANOTHER SMALL BUSINESS TOOK ROOT IN ALUMINUM

The BOOM That Launched a Beer Barrel



Remember what everyone said? War production experience would be invaluable in peacetime. But how has it worked . . . especially for "small business"?

Here's how it's working in Beatrice, Nebraska . . .

When the Navy's big guns were booming, they needed aluminum tanks for powder storage and handling. Beatrice Steel Tank Company wasn't a "big business", *and they had never made a thing of aluminum.* But they undertook making these aluminum tanks and set about learning how to do it.

That led to Alcoa. We took their executives right into an Alcoa plant where similar tanks were being made. They watched . . . questioned . . . noted how aluminum was formed and joined. Then they went back and set up their own line, freely calling on the know-how of Alcoa engineers to help get it rolling.

From that line rolled eight million pounds of aluminum, in the form of powder tanks. But how could all those tons of aluminum experience be used after the war?

Beatrice Steel Tank's first answer is an aluminum beer barrel. Alcoa provided the blueprints for it, the blueprints of the beer barrel Alcoa made by the thousands before the war. It's light, clean, friendly to beer—a successful aluminum peacetime product.

• • •

Stories like this are many among small businesses that were introduced to aluminum during the war and were helped by Alcoa to get their production going. You don't need aluminum experience to develop *any* practical idea you may have for an aluminum product. Alcoa stands ready to help you with the largest fund of Aluminum experience in the world. Use it. ALUMINUM COMPANY OF AMERICA, 2109 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA FIRST IN ALUMINUM

REG. U. S. PAT. OFF.

THE VETERAN RETURNS

by

Dorothy Haller

DIFFICULT readjustments face the thousands of war veterans who are returning to work every week. Almost everyone they meet—family, neighbors, old friends, workers on the job, have a part in the readjustment to the routine of civilian life.

More important, with exception of the folks at home, is the man who will help the veterans get back to work—his immediate supervisor. If the veteran finds a job in the village drugstore or supermarket, in a garage or service station, the relationship is simple and obvious. If he goes into a manufacturing plant or into an industrial job, the man who will count most, from the day he sets foot in the factory, is his immediate boss, the foreman.

Recognition of the importance of the foreman. B. G. Parker, president of the Youngstown Foundry and Machine Co., who is chairman of a special supervisory relations committee of the National Association of Manufacturers, puts it this way: "The foreman can perhaps do more than any other individual in the plant to help the veteran make a satisfactory adjustment to his job."

The foreman is in a position to know what each job must produce. He knows the job, its mental and physical requirements, working conditions, and the hazards and difficulties involved. In addition, he must have a proper understanding of how to deal with returning servicemen — how to handle not only the technical but the human problems that will arise in everyday relationships. Primarily, they will be accustomed to the military way of doing things and there will be two extreme reactions—one to retain and copy military efficiency; the other to rebel against "regimentation." The able foreman can capitalize on either of these attitudes.

Getting the individual's war experiences in as detailed a form as possible helps greatly in placing him properly on the job, says the American Iron and Steel Institute which has made a case-history study of veteran-placement in the steel industry. Several companies not only have instructed their foremen in the delicate task of guiding ex-servicemen in their early days on the job, but have selected World War I veterans as special rehiring officials, since they appreciate ex-soldiers' attitudes and problems. Some returning soldiers want quiet surroundings; others need a certain amount of time off weekly for medical treatment. All are encouraged to set their own work pace. The Iron and Steel Institute study concludes, "On the basis of experience to date, steel company rehiring officials contemplate with confidence the return of the bulk of the veterans."

Data the foreman will want to know include:

1. Employer legal obligations in rehiring veterans. Section 8 of the Selective Service and Training Act of 1940 defines servicemen's and women's re-employment rights.

2. Seniority practices and provisions of union contracts, if any. The Selective Service Act requires that a veteran be given a job equivalent in seniority, status and pay to the one he left before going to war. Seniority rights accumulate during military or naval service.

3. Provisions of the so-called G. I. Bill of Rights—the "Servicemen's Readjustment Act of 1944." This law enumerates important benefits for returning servicemen and women in connection with unemployment compensation, educational opportunities, hospitalization, loans, and special employment services through federal agencies.

4. The company's program for re-employing and retraining veterans, or for welcoming newcomers to the payroll.

5. Special facilities for helping physically-handicapped workers to adjust to their new jobs, as well as the ordinary benefits available through the company's medical and recreational departments.

The realization that every veteran employed presents an entirely different set of physical and psychological circumstances and of training and employment background forms the background for the comprehensive re-employment procedures now in operation in many large plants.

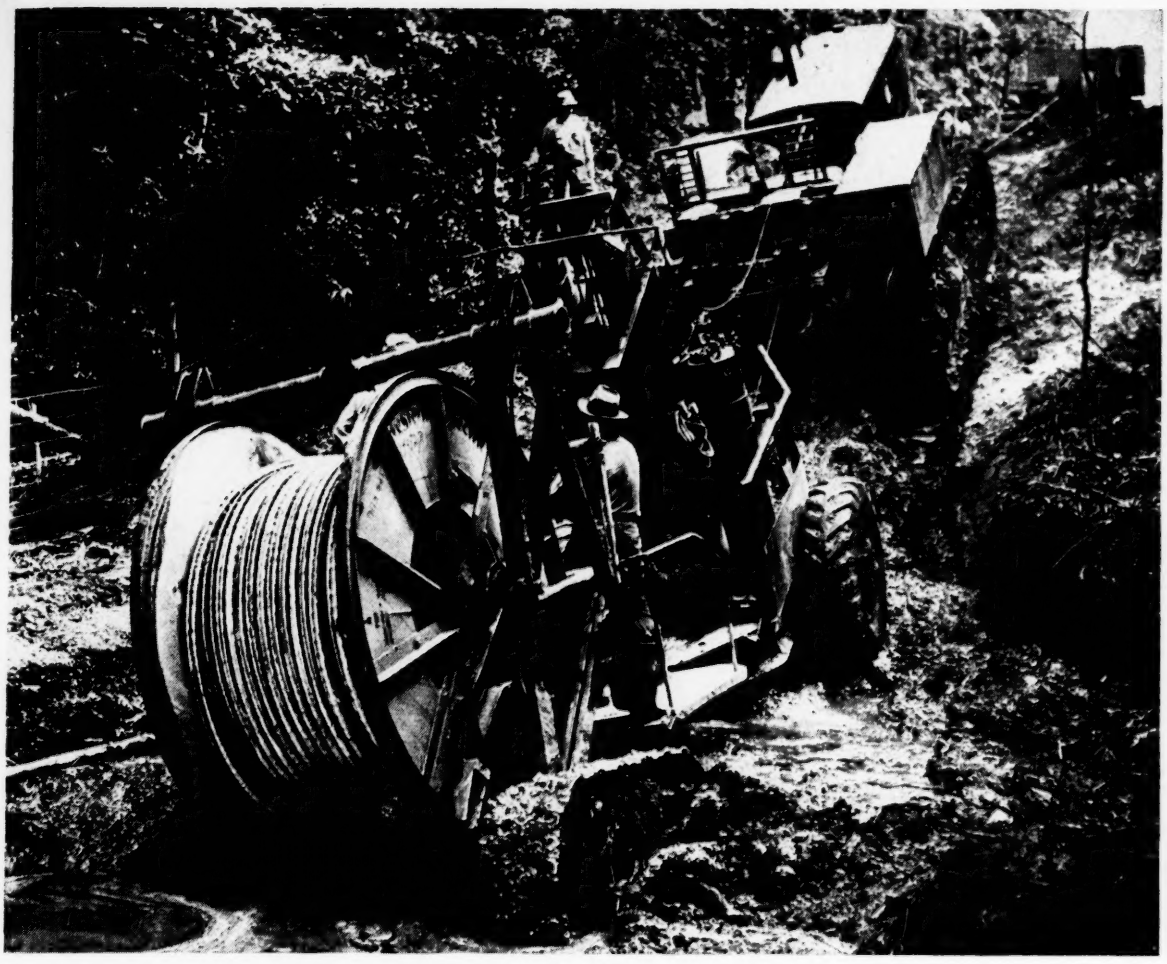
Bethlehem Steel Corp., one of the nation's largest industries, now employs more than 15,000 veterans, of whom close to 10,000 had not previously worked for the firm. Says R. A. Lewis, general manager of the Bethlehem plant, "We have tried not to devise a rigid program. We feel that each man needs individual attention."

General Motors Corp. has one of the most comprehensive procedures for veteran re-employment, a program that will be accelerated as its divisions reconvert to peacetime auto production. The part played by the GM personnel division, foremen and other supervisory employees gets special emphasis. At each plant, a personnel representative coordinates medical data, employment experience and training and supervision of the ex-soldiers. This personnel worker (1) surveys jobs from the standpoint of physical requirements, (2) assists in placing veterans in keeping with medical recommendations, (3) follows up the progress of each veteran to see that he has become acclimated, is able to carry the job, or is transferred where necessary, and (4) keeps in touch with regional offices of the Veterans Administration and the Red Cross concerned with the handling of disabled veterans.

Dr. Paul J. Oschner, medical director of a General Motors plant at Cleveland, holds that the continuous follow-up on the part of the personnel man and foreman pays off, even though it takes time and is costly. He tells the story of a veteran who badgered the doctor every few days. His first job, it seemed, was too hard on him as he had to spend too much time on his feet. He complained to his foreman that his second job made him sit down too much. Transferred to a third job, he protested that the work gave him abdominal pains. The doctor, foreman and personnel director went into a huddle.

The ex-soldier was obviously a "nervous" case. Other workers resented his continual complaints. It was finally decided to put the man

(*Continued on page* 138)



THIS LOOKS LIKE A WAR PICTURE but it's right here in the U. S. A. It shows a part of a telephone cable-laying job. We're planning to install 2,100,000 miles of Long Distance circuits within a year.

Lots of action on the Long Distance front

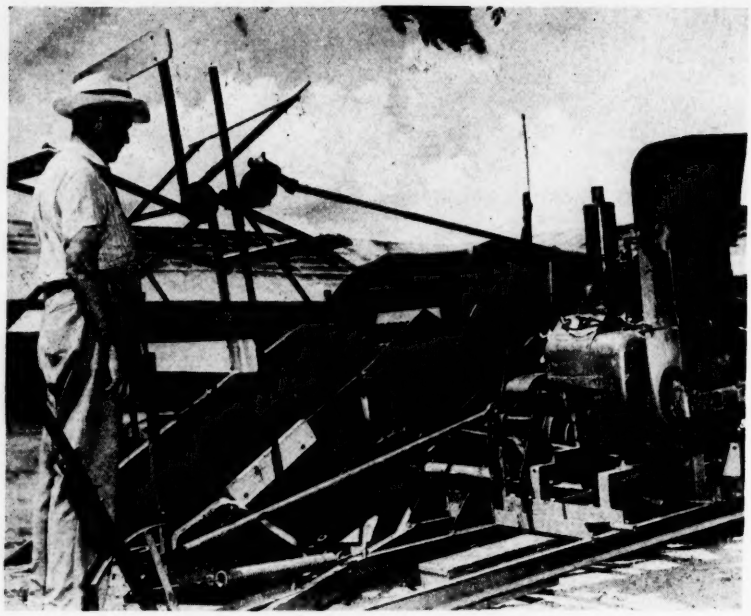
Long Distance calls are still at a high level and there's still pressure on the wires. But we're on the way to giving you more and better service than you've ever had before.

Telephone factories are turning out equipment for peace with the same speed that they turned it out for war. All over the land, telephone men are laying cable, installing switchboards and working on new telephone buildings for the nation's increased needs.

It's a tremendous job and it will take some time and a lot of money. But we're going at it, eagerly and efficiently, with every resource at our command.

BELL TELEPHONE SYSTEM

Listen to **"THE TELEPHONE HOUR"** every Monday evening over NBC



Above—Ramie harvester and decorticator.

NEW DECORTICATOR SEEN BOON TO SOUTH'S RAMIE GROWERS

A NEW type decorticator, or stripper, invented by G. B. Brereton, and being built by the Dixie Machine Welding and Metal Works, of New Orleans, La., may make possible the raising of ramie on a large, commercial scale.

Ramie has been known for thousands of years, but has never been grown extensively because of processing difficulties. Previous attempts to work the plant into fabric have been made by harvesting the stalks, transporting them to a factory, and there decorticating them.

The ramie stalk hardens and dries rapidly after cutting. Heretofore commercial growing was possible in countries with extremely cheap labor, where stripping could be done by hand.

The Brereton decorticator harvests and strips the plant in the field. The material is delivered to the factory where it is cleaned and degummed. After this process it is in ribbon form, called "filasse", and is ready for spinning.

Ramie requires little labor after the first year, and is harvested during the summer months. Estimates place the cost of labor and materials during the first year at $81 an acre; in the second year, $49.50 an acre. Ramie is a perennial, and requires almost no cultivation after the first year. This estimate assumes a yield of 1,500 pounds of fiber an acre annually, and thus the agricultural cost would be 3.3 cents a pound. The estimate further assumes that decortication and degumming would be performed in one plant at a cost of 1.7 cents a pound for decortication and 5.5 cents a pound for degumming. Total cost to the producer, according to this estimate, would therefore amount to 10.5 cents a pound. Using the Brereton machine would probably further reduce the cost since the stripping process is combined with harvesting.

Left—Gilbert Brereton holding ramie as it comes from his machine. The ramie is scraped from the plant by a series of automatic combs. Degumming is the next step before it is ready for spinning.

There is not yet an established price range for ramie. Degummed ramie sold for 40 cents a pound before the war. Under pressure of war demands mills have paid up to 60 cents a pound. At former price levels the profit a pound would be 29.5 cents; the profit per acre, $442.50. This can be multiplied by the number of cash crops a year, which vary from three to six, depending on the land.

The qualities of the fabric produced are extraordinary. Most prominent of the characteristics is its strength. Ramie fiber is reportedly the strongest known. Its tensile strength is four times that of flax, more than eight times that of cotton, about three times that of hemp, and almost eight times that of silk. In elasticity ramie is equal to cotton, 50 per cent more elastic than flax, and 33 per cent more than hemp. It is less elastic than silk. The torsion strength of ramie is somewhat greater than that of either flax or hemp, but is less than that of cotton or silk.

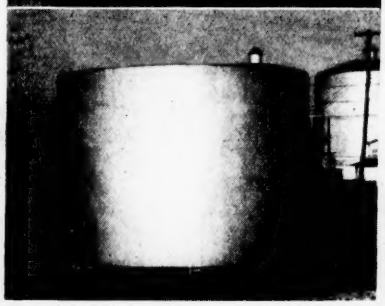
Ramie holds water to the extent of 28.5 per cent of its dry weight. Instead of losing strength when wet, as do many fibers, particularly synthetics, ramie is 30 to 60 per cent stronger when wet than when dry. Ramie dries rapidly. It is nonshrinkable and is highly resistant to mildew as well as to other microorganisms.

When thoroughly cleaned the fiber is pure white, requiring no bleaching. It retains dye and can be spun, woven, or knit on standard textile machinery, and can be made into fabrics as delicate as silk and as coarse as heavy canvas.

During the war ramie was used as packing for the stern tubes of vessels to prevent sea water from

(*Continued on page* 134)

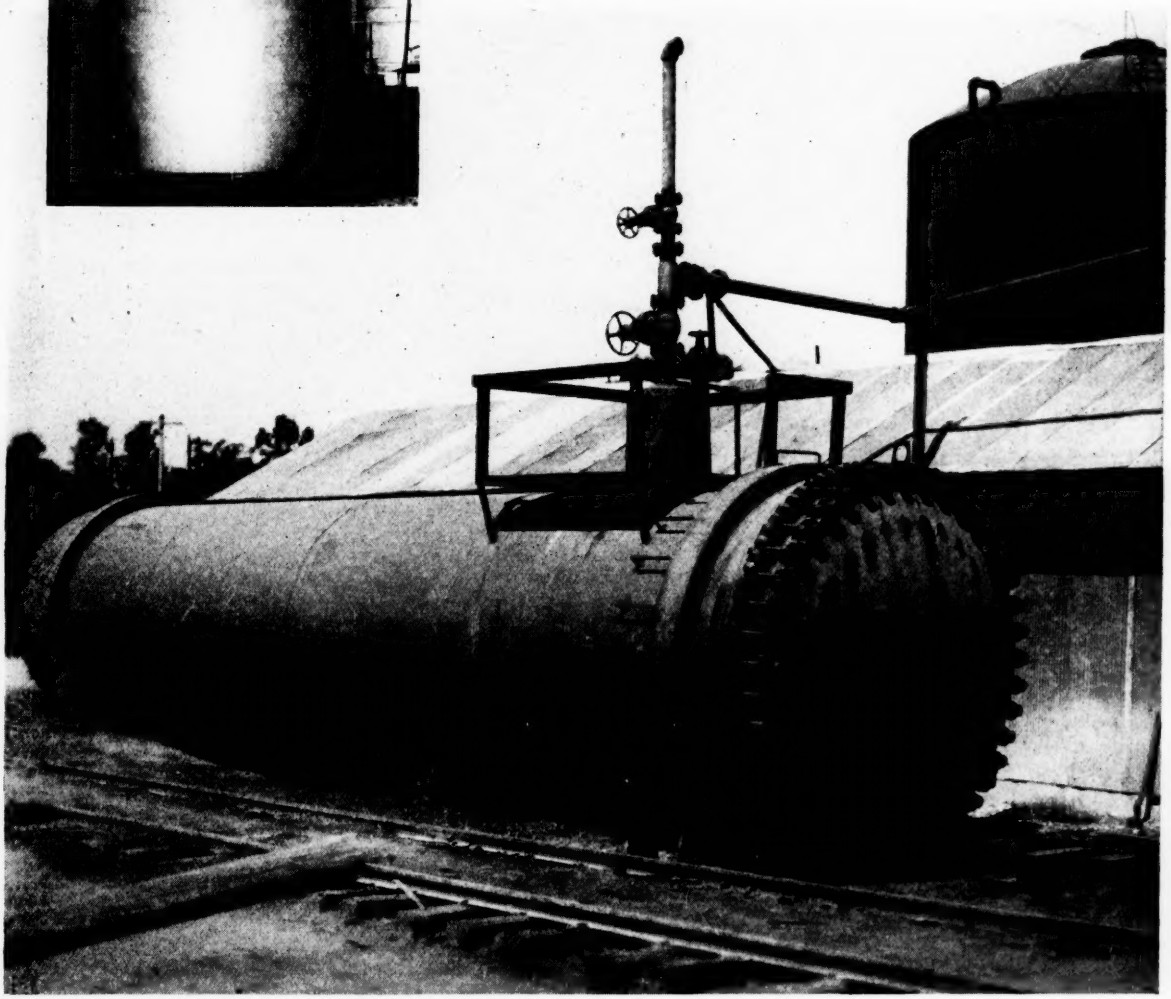
...for Mississippi's growing industries



We are proud to have a part in the South's great industrial expansion program by furnishing steel storage tanks and steel plate work for all types of industry.

● Our Birmingham plant, strategically located to give you fast, efficient service, is fully equipped to design, fabricate and erect storage tanks, bins, steel reservoirs, pressure vessels and elevated water storage tanks to meet today's needs of the industrial South. The structures shown on this page are typical of the equipment we are building. At the left are two cottonseed storage tanks 70 ft. in diam. by 60 ft. high and a 10,000 bbl. oil tank 47 ft. 9 in. in diam. by 31 ft. 6 in. high. The large view below shows a creosoting cylinder 8 ft. in diam. by 40 ft. long.

Write our nearest office for quotations.



CHICAGO BRIDGE & IRON COMPANY

Atlanta 3.....2145 Healey Building
Birmingham 1.....1530 North Fiftieth Street
Houston 1.....5614 Clinton Drive
Tulsa 3.....1611 Hunt Building
New York 6.....3313—165 Broadway Building
Cleveland 16.....2216 Guildhall Building

Chicago 4.....2106 McCormick Building
San Francisco 11...1240-22 Battery St. Building
Philadelphia 3...1619—1700 Walnut St. Building
Los Angeles 14.....1417 Wm. Fox Building
Washington 4.....703 Atlantic Building
Detroit 26.....1510 Lafayette Building

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PENNSYLVANIA

News from Industry

First Post-War Steel Box Cars Built By Mt. Vernon

The first new standard steel box cars built by Mount Vernon Car Manufacturing Co., a division of H. K. Porter Co., Inc., since the end of the war and completion of war-time orders, are now rolling from the assembly lines. They are part of an order of 500 being built at Mt. Vernon, Ill., for the Atchison, Topeka and Santa Fe Railway Co.

Steel-sheathed and wood-lined, the Santa Fe box cars are 40 feet 6 inches long and have a capacity of 3966 cubic feet. Couplers and yokes are high tensile and wheels are one-wear wrought steel. Endlining is hinged to clean out dust, grain, etc. to control weevil.

Navy Man Back on Job

Lieut. A. C. Nydegger, U. S. N. R., has returned to the Milwaukee office of Blackmer Pump Co., as manager after having been relieved from duty in the Navy. His headquarters are at 1127 North Van Buren St. Mr. Nydegger served as an engineering officer in the Navy and attained the rank of lieutenant senior grade.

Engineer Aide Appointed

R. R. Robinson has been named assistant chief engineer in charge of engine design at Caterpillar Tractor Co., it is announced by G. E. Burks, chief engineer of the Company. Mr. Robinson joined "Caterpillar" in 1934 as an engineering apprentice of the college graduate training course after his graduation from the University of Nebraska. Upon completion of his training in 1936 he joined the engineering department first as draftsman, then detailer, checker and designer. He became supervisor of engine design and after serving in various positions throughout the department, was appointed general supervisor of the engine design dvision. Mr. Robinson is chairman of the Peoria section of the Society of Automotive Engineers.

Peak Salary Announced

Andrew J. Higgins, Sr., chief of Higgins Industries, Inc., New Orleans, La., topped all officers of Louisiana or Mississippi industry in salary for 1943, with a salary of $83,333.33, according to a report by the U. S. Treasury Department.

Patent Statutes Discussed

Creation of special patent courts to handle increasing problems of technological discoveries was proposed by Casper W. Ooms, U. S. Commissioner of Patents in an address before the Chicago section of American Chemical Society. At the same discussion, Dobert Gottschalk, patent counsel of Corn Products Refining Co., urged that patent appeals be restricted to a single, special court. He suggested also that attempt be made to outlaw by statute wild theories by which patents may be invalidated or refused. Mr. Ooms said that extensive changes are needed in the administrative procedure of granting patents and that the present system, while sound, should be simplified to facilitate and speed the issuance of patents.

Marion Instrument Catalogue

Marion Electrical Instrument Company of Manchester, N. H., announce a comprehensive catalogue that will become available on or about January 15. This 28-page book illustrates and describes the Marion line of standard and hermetically sealed electrical indicating instruments, including the very latest and up-to-date developments in the instrument field.

An interesting section of this catalogue is intended as a guide to prospective purchasers of electrical indicating instruments. This section incorporates detailed explanations of the factors involved in the uses of instruments in general, and points out the specific indications for certan instruments, thus assuring the buyer that he will obtain the right instrument for his equipment.

The catalogue further shows the development of instruments at Marion, various production procedures and the rigid tests to which the instruments are subjected during manufacture to insure the highest possible efficiency and satisfaction during use.

Arundel Official Dies

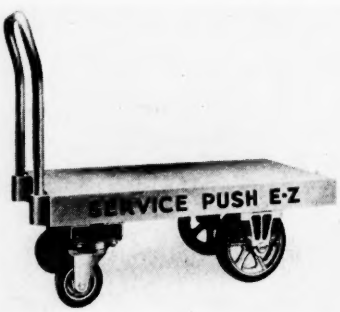
Joseph N. Seifert, for a number of years secretary-treasurer of the Arundel Corporation, Baltimore, and its allied interests, died unexpectedly at his home on December 23d.

Mr. Seifert was one of the young men just out of high school, taken into the Arundel Corporation by the late Frank A. Furst, founder of that company.

Mr. Seifert is survived by hs wife, the former Miss Mary Clare Schanberger; three sons, Lieut. John R. Seifert and Corporal Joseph N. Seifert, Jr., both with the occupation forces in Germany, and Robert J. Seifert, and two daughters, Mary Clare and Anne L. Seifert, and his brother, F. J. Seifert, of the Alban Tractor Company, Inc., Baltimore, and for a number of years on the advertising staff of the Manufacturers Decord.

Lightweight Truck Displayed

Designed for greater pay load from lighter weight, a magnesium alloy truck built by the Service Caster and Truck division of Domestic Industries, Inc., Albion, Mich., is currently on a tour of major cities for exhibit. The truck, a Push-E-Z model with capacity of 6,000 pounds, is represented as weighing 103 pounds less than the same truck made of steel and to be one-third lighter in weight than a similar model made of aluminum.



Sub-Ocean Oil Being Tested

Scientific tests conducted over a period of two years indicate that an oil pool exists off Cape Hatteras, N. C., 8,500 feet beneath Pamlico Sound. Drilling operations were started last month in the area after 2,000,000 acres had been surveyed by seismograph. In making the tests that preceded actual drilling, geologists set off explosions beneath the water of the Atlantic Ocean and noted with seismograph's the angle at which the sound waves rebounds.

Airfreight Service Launched

Braniff Airways announces that it has launched its airfreight program in 32 cities on the airline's system. Published tariffs are said to contain important lowering of rates and all rate information is available at any Braniff ticket office. Rates are listed as ranging from 30 to 45 cents per ton mile with a minimum of 25 pounds per shipment. Contracts with trucking firms in each city are said to provide once-a-day pickup and delivery service with charges included in tariff rates. Class I articles are listed as moving at 45 cents per ton-mile; class II at 40 cents. The 36-cent rate applies to shoes, fabrics, ready-to-wears, drugs and all types of seafoods. Great Circle Mileage is used for rate computation.

DuPont Makes Staff Changes

E. I. du Pont de Nemours & Co., Wilmington, Del., has announced the appointment of Dr. Ernest B. Benger, heretofore general assistant manager of the technical division of the Rayon department as manager of the division. He succeeds M. du Pont Lee, who was recently named general consultant in the engineering department. A. E. Buchanan, Jr., continues in his present capacity as assistant manager of the technical division, the announcement states.

Form Film Developed

A new protective coating for wooden concrete forms has been announced by the research laboratories of A. C. Horn Co., 43-35 Tenth St., Long Island City 1, N. Y. The product, known as "Formfilm," is designed to allow contractors to coat the surface of plywood forms with the same thickness of film in one coat as previously obtained in two coats. It is suggested by its makers for replacing mineral oils which may dissipate from the surface and disappear into the boards themselves. The product is said to be resistant to warping or swelling and to have the quality that concrete will not adhere to it at any stage of drying.

Link-Belt Promotes Two

Announcement has been made by Link-Belt Co., 307 N. Michigan Ave., Chicago, Ill., that Joseph W. Sears, heretofore district sales engineer at the Dallas plant has been named district sales manager with headquarters at 711 Main St., Houston, Tex. Also announced is the appointment of Stuart Penick as district sales engineer at Dallas.

Oklahoma Firm Celebrates

The twentieth anniversary of Erwin, Wasey & Co., was celebrated recently at the Oklahoma Biltmore hotel, Oklahoma City, Okla., at a banquet sponsored by Harold Halsell, vice president and secretary-treasurer of the firm. Introduced at the meeting were new members of staff Rock Christensen, and Mitchell Williamson.

Works Manager Named

Otto M. Jensen, for many years an executive of the Peerless Machine Co., Racine, Wis., has been appointed works manager and vice president in charge of engineering, according to a recent announcement.

Supplying light and power for a U. S. Navy victory train, promoting the sale of Victory Bonds throughout the country, was a 75 KW self-regulating "Caterpillar" Diesel Electric Set, one of thousands manufactured especially for the Navy. The set was also part of an exhibit of U. S. fighting equipment, brought to the general public.

These units were the backbone of naval advanced base operations, supplying power for communications, lighting repair shops, refrigeration and other combat-supporting functions. They can also be used with mobile radio and radar equipment.

An Invitation from **GREENWOOD, MISSISSIPPI** *to Industry*

Greenwood—

"The Gateway to the rich Mississippi Delta Region" offers many advantages to industry.

The largest wholesale distributing center in the state—regardless of population, in terms of actual dollars volume—also fifth largest retail market.

More people live within a 60 mile radius of Greenwood than any other city in the state (over 600,000), or 30% of the state's total. Electrical power and water is provided by municipally owned plant. Industrial rate will be negotiated, graduated according to power consumption, to as low as 6 mills per KWH inside and outside city limits.

Natural gas available thru Mississippi Power & Light Co. Rates most favorable to industry will be quoted.

Ample labor supply. No unionization of any type. The City of Greenwood has only nine-tenths of one per cent foreign born population.

Entirely adequate transportation facilities are available—Greenwood is served by two railways—Yazoo & Mississippi Valley (Illinois Central System)—Chicago to New Orleans, via Memphis and Jackson. Columbus and Greenville—east/west across state. Five trucking companies, two bus lines and Chicago and Southern Airlines also serve the city. Three U. S. State highways and a system of county roads radiate from Greenwood, connecting with adjacent counties.

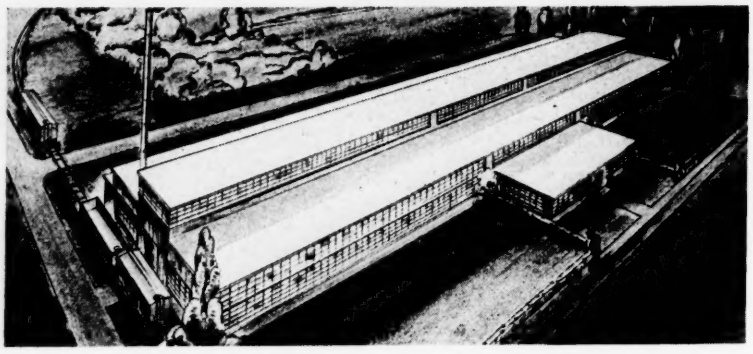
Greenwood is represented by 15 religious denominations and three separate city school systems.

We invite inquiries and ask the privilege of submitting special surveys.

GREENWOOD CHAMBER OF COMMERCE

Greenwood *P. O. Box 848* **Mississippi**

News from Industry



Plant Site Selected

(Shown Above)

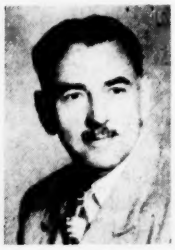
H. A. Toulmin, Jr., chairman of the board of Hydro-Power, Inc., established 1939, designers and builders of hydraulic pumps, valves and controls, announces that Springfield, Ohio, has been selected as the site for a new factory. The building is being constructed on a ten-acre tract located at the corner of Sheridan and Belmont streets in the southeastern section of the city.

The first unit of the new factory will have a total floor space of 36,000 square feet. Production of Hydro-Power pumps, valves and controls is scheduled to start in February 1946. Approximately 300 skilled workmen will be employed. Sales and Engineering Departments of the company will be located in a new office building being built adjacent to the factory.

A-Bomb Builder Joins Ethyl

William Irwin, formerly construction supervisor at the Oak Ridge, Tenn., atomic bomb project, has been appointed assistant resident manager of the Ethyl Corp., manufacturing plant in Baton Rouge, La., according to an official announcement. Following his work at Oak Ridge in 1943 Mr. Irwin was associated in the following year with construction of the atomic bomb project at Hanford, Wash. Previous to joining Ethyl, he was for 12 years a member of the staff of E. I. du Pont de Nemours and Co., and was field project manager in charge of all construction work when building operations began at the Ethyl plant in Baton Rouge in 1936. Since May, 1944, he has been works engineer in the organic chemicals department of du Pont in the operation of portions of the Baton Rouge Ethyl plant, operation and management of which were transferred to Ethyl Corp., in Sept. 1945.

W. Irwin



L. A. Wheelock

Appointed Western Manager

The appointment of L. A. Wheelock as western manager of equipment tube sales has been announced by C. W. Shaw, sales manager for the radio tube division of Sylvania Electric Products Inc. Mr. Wheelock has been with Sylvania since 1932, and was recently manager of the Central Division. In his new capacity he will continue his duties in the Central Division, but in addition, he will supervise the equipment tube sales activities in all territory west of Chicago. Mr. Wheelock will also continue to have his headquarters in the Field Building, 135 South LaSalle Street, Chicago, Illinois.

Diesel Group Elects Staff

E. J. Schwanhausser, vice president of Worthington Pump & Machinery Corp., was elected president of Diesel Engine Manufacturers Association at the association's annual meeting held recently in Chicago. Gordon Lefebvre, president of Cooper-Bessemer Corp., and J. E. Peterson, vice president of General Machinery Corp., were elected vice presidents of the association. Robert H. Morse, Jr., vice president, Fairbanks, Morse & Co., was reelected treasurer and also reelected was Harvey T. Hill, executive director. New directors elected: A. W. McKinney, National Supply Co.; G. F. Twist, Atlas Imperial Diesel Engine Co., and Norris H. Schwenk, Busch-Sulzer Bros. Diesel Engine Co. Continuing on the Board: George W. Codrington, General Motors Corp.; Charles E. Brinley, Baldwin Locomotive Works; Robert E. Friend, Nordberg Mfg. Co.; together with Mr. Schwanhausser, Mr. Morse and Mr. Lefervre.

Plate Glass Opens Branch

Announcement has been made by Pittsburgh Plate Glass Co., 632 Duquesne Way, Pittsburgh, Pa., of the opening Jan. 1 of a branch in Joplin, Mo., at 509 Joplin Ave. The new unit will be in charge of Knox Boast, formerly paint manager at the company's Oklahoma City branch.

Swanson Promoted by Strand

On Jan. 1, Wilburn H. Swanson, previously superintendent and general purchasing agent, became general manager of N. A. Strand & Co., of Chicago, manufacturers of flexible shafts and machines. Mr. Swanson replaces Clyde W. Blakeslee who has voluntarily retired from the post of general manager after 25 years of service with the company in that capacity, according to an official announcement by the firm. Mr. Blakeslee will continue to act in an advisory capacity, according to the announcement.

New Mill For Morristown

Morristown, Tenn., has been selected by Belding-Heminway Co., major thread producing firm, as the site for a new thread throwing mill. The new mill will concentrate on throwing nylon and other synthetic yarns for use in the company's plants at Bedford, Va., and Putnam, Conn. The site selected at Morristown embraces seven and a half acres on which a plant of 50,000 square feet floor space will be erected. Construction is scheduled to start in the spring of 1946. About 250 persons will be employed in the plant when it gets into production.

N. & W. Man Promoted

The promotion of A. O. English, of Roanoke,, Va., special movement passenger agent, Norfolk and Western Railway, to traveling passenger agent, with headquarters at Roanoke, succeeding J. B. Ragland, recently promoted, has been announced by company officials. Mr. English started to work for the N. & W. in April. 1919, as a ticket seller at Petersburg, Va. Since then, he has served successively as assistant city ticket agent. Norfolk, Va.; relief ticket agent, Roanoke, and in April, 1942 was promoted to special movement passenger agent.

Staff Changes Announced

Southern States Iron Roofing Co., Savannah, Ga., has made the following official and executive changes in its organization, as announced by Frank O. Wahlstrom, president of the company: J. W. McIntire, vice president in charge of sales becomes executive vice president; J. R. Anderson moves up from assistant to vice president of sales to general manager of sales; E. C. Boyce takes over as manager of advertising and mail order sales; Kenneth A. Helmly has been assigned to the post of assistant manager, mail order division.

Rubber Fooled the Nazis

It has been disclosed by Goodyear Tire & Rubber Co. that one of the ruses adopted by American invasion forces just before D-Day consisted of a vast number of rubber replicas of PT boats and other invasion craft. These "dummies" were inflated and set up at chosen points of debarkation and after their effect had been applied, were deflated and moved to other points—thus creating the impression of hundreds of thousands of craft poised for invasion at points from which no such action was ever contemplated. The operation is said to have received credit as an important factor in the success of Allied invasion strategy.

Knoxville Population Up

Greater Knoxville now has a population of 206,743, according to an estimate based on a new 1945 city directory. The estimate indicates a 4,774 population increase during the past year. Total non-agricultural employment in the area is reported at 145,000 with many job openings available in textile, aluminum, mining and other industries.

Slag Dumps Reclaimed

Abandoned properties of Dayton Coal & Iron Co., including 30,000 acres in Rhea, Bledsoe and Meigs counties, Tennessee, as well as considerable area adjacent in Georgia, have been purchased by Nashville capital for the purpose of reclaiming slag dumps for concrete block manufacture. Plans call for first shipments this month. Farm lime and coal are also planned to be produced by the new operators.

Huge Tire Developed

(Illustrated Below)

What is said to be the largest bomber tire in the world, built by The Goodyear Tire & Rubber Company, Akron, O., would have been used to help hurl destruction and death at the Japanese had they not capitulated under fire of the atomic bomb. It had been announced by Gen. Henry H. Arnold, U. S. Air Forces chief, "that a new super bomber whose range makes B-29 Super-Forts seem like something for a local whistle-stop," was ready to go against the enemy. The bomber tire was conceived and developed by Goodyear technicians. Measuring 110 inches in overall diameter, 44 inches across the beads and 36 inches from one sidewall to another, the complete assembly weighs 2,600 pounds. Weight of the tube alone is 250 pounds.

The Emporium

JACKSON, MISSISSIPPI

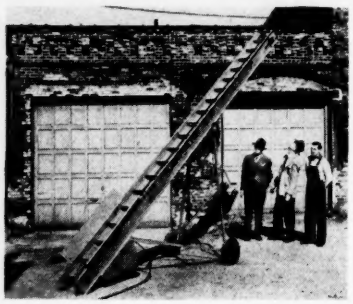
WITH a combined history of over one hundred and twenty-five years, these two outstanding stores have set a pace in giving the people of Mississippi the latest styles and the finest quality of merchandise at reasonable prices. In every civic endeavor they have taken a full part.

Marks-Rothenberg Co.

MERIDIAN, MISSISSIPPI

News from Industry

Height Conveyor Announced



For materials handling where height is a problem, American Conveyor Co., 1115 West Adams St., Chicago 7, Ill., has announced an addition to its line of portable electric conveyors, known as the "High-Boy." It is represented as built to fit the Coal-Veyor, Coal-Veyor Jr., and Con-Vay-It belt model American conveyor machines and the Flight-Veyor drag-chain type. With the High-Boy it is said to be possible to raise conveyors over 12 feet for working stockpiles in coal yards and for unloading and loading materials from box car to bin or loading platform. Details of the machine are listed as being: "T" iron frame, safety stop, sprocket and roller chain winch, pneumatic tires, roller bearings and carrying capacity of 1500 pounds.

Staff Changes Reported

Four personnel changes have been announced by Wagner Electric Corp., 6400 Plymouth Ave., St. Louis 14, Mo. Forrest G. Wilson, formerly salesman at the Dallas branch, has been appointed manager of the Indianapolis branch. H. F. Zahn, heretofore manager of the Atlanta branch, has been made manager of the Philadelphia branch. Replacing Mr. Zahn, C. G. Jackson has been transferred from the Boston branch to Atlanta to manage that branch. J. K. Miller, New York branch salesman has taken over the management of the Boston branch.

Ventilator Crate Devised

Officials of H. H. Robertson Co., Pittsburgh, Pa., distributors of ventilators, have disclosed the development of a new type wire-bound crate for ventilators. The new contrivance is designed to facilitate the problem of shipping ventilators in international transportation and to replace formerly used wooden nailed crates weighing up to 350 pounds. The new wire-bound box is listed as weighing 147 pounds. It is said to facilitate stacking, and to reduce packing time. Revised shipping classification is said also to have brought a reduction in shipping costs. Shipments of ventilators are reported on the increase to plants in America and all parts of the world. Made in six sizes, Robertson ventilators are reported in use in light and heavy industrial plants, airplane hangars, hospitals, housing units, office buildings and similar structures.

New Sealing Machine

Pack-Rite Machines, 828 North Broadway, Milwaukee 2, Wis., announces the development of "Tech-Master," a sealing machine of the jaw type designed to enable bags or pouches to be fed in a vertical position, enabling contents to sift naturally to the bottom of the bag. Operatable on a 110 AC thermostat, providing range of heat for all heat-sealing material, heat distribution is provided by full-length Regan heating elements. Three sizes of the machine are obtainable; also three types of krimp impressions. An adjustable feed tray is available as additional equipment.

Raised to Department Head

Arthur R. Tofte has been named manager of the advertising and public relations department of Allis-Chalmers Manufacturing Co., by William C. Johnson, vice president of the firm's general machinery division. Mr. Tofte has been a member of the department since 1938 and succeeds George J. Callos who resigned to become vice president and account executive for Klau-Van Pieterson-Dunlap Associates, Inc., Milwaukee advertising agency. The new manager entered the department as copy chief and became director of employee publications in 1942, a position he held until selected to head the department.

Drafting Pencil Announced

A new refillable draftsman's pencil designed to eliminate broken leads has been announced by Charles Bruning Co., Inc., 4654-8 Montrose Ave., Chicago 41, Ill. Designated as No.

3583, the pencil is constructed with a new type of clutch which holds the lead in a rubber grip. It is described as being light in weight, with long barrel, permitting use of standard drafting lead from .079 inch to .070 inch including HB and 9H. The grip is knurled and an adjustable cap provides identification of the degree of lead used.

New Rubber Peak Foreseen

The rubber industry of the United States expects in 1946 to increase the value of its production over that of 1939 by 66 per cent, according to a report issued by U. S. Rubber Co. The 1939 production figure of $900,000,000 is expected to climb to $1,500,000,000. The report estimates total rubber consumption by the United States at 900,000 tons which compares with a previous high of 780,000 tons in 1941 and with an annual prewar average of 540,000 tons. One-third of 1946 production is expected to be of natural rubber; two-thirds of various types of synthetics. World consumption of all types of rubber in 1946 is placed at 1,400,000, with potential world production, including both natural and synthetic, estimated at 1,900,000 tons.

Protected Metal Announced

A new product, "Plastipitch," is reported to have been developed by Koppers Co., Inc., Pittsburgh, Pa., in the form of protected metal for roofing and siding on industrial buildings. The product is represented as consisting of flat, corrugated or V-crimp steel sheets, the surfaces of which have been treated with plastipitch for the purpose of providing permanent adherence to metal at low as well as high temperatures and to protect the base from rusting, corrosion, salt air and the effects of chemical fumes.

Synthetic Rubber Adds to Dependability of Generator

A wartime development of interest to industry is the compact, light-weight, all-weather portable gasoline engine-driven generator manufactured by the Homelite Corp. of Port Chester, N. Y. Spurred on by the exacting demands of the armed forces, Homelite engineers succeeded in meeting every requirement for a power generating unit that could be used in tanks, ships or planes under all possible conditions and on any grade of gasoline available.

A small resilient seal, less than ¼-inch in diameter, in the carburetor needle valve adjustment, makes a major contribution to the versatility and dependability of these generator units. This seal is made from Hycar gasoline-resistant synthetic rubber, a product of Hycar Chemical Co., of Akron, Ohio. This material provides exactly the right combination of properties required in the seal to insure the sensitivity and dependability of the needle-valve adjustment, say the manufacturers.

Homelite engineers explain that the selection of Hycar for the seal in the carburetor needle-valve adjustment was dictated by the rigid requirements that had to be met under any operating condition. The needle valve had to be very sensitive and capable of being set to an extremely precise adjustment. At the same time, it had to maintain that adjustment under adverse conditions and, of course, insure against any possible leakage. This meant that swelling of the seal must be definitely limited in any grade of gasoline, including aromatic fuels, which are notorious for their destructive effect even on most oil-resistant synthetic rubbers. The sealing qualities must also be retained at temperatures down to -65 degrees F. Further, the seal must not adhere to the metal shaft of the needle valve, nor bind under any circumstances.

New Gage Blocks Announced

Fonda Tungsten-Carbide gage blocks, described in Data Sheet TC-1 issued by Fonda Gage Co., Stamford, Conn., are being offered for general use. They are manufactured in sets of 35 pieces ranging in size from .001 to four inches and are represented as having a much higher wear resistance than similar gage blocks made of steel.

Sales Manager Appointed

Hendrick Manufacturing Co., Carbondale, Pa., has announced the appointment as sales manager of Trowbridge A. Warner who was formerly sales manager of Register and Grille Manufacturing Co., Brooklyn, N. Y. Hendrick manufactures perforated metals, architectural grilles, screens and Mitco products.

Philco Agent Appointed

Appointment of Charles F. Greene as Atlanta representative of the Storage Battery division of Philco Corp. has been announced by J. G. Green, assisant general manager. Mr. Greene was formerly connected with A. K. Sutton, Inc., Philco distributors in Charlotte, N. C.

Resistance Welding Training

A new seven-part training course by slide sound films, lesson books, quiz book, and an instructor's manual has been prepared by Westinghouse. Although produced primarily for Westinghouse employees, the material has been made available to others at reproduction costs because of many requests from engineering groups and individuals interested in resistance welding control.

From 8 to 10 hours are recommended for the full seven-part course, two hours for each of the four lessons. Subjects covered by the course are as follows:

Part One—Basic Definitions of Welding Technology: Forge Welding; Gas Welding; Thermit Welding; Electric Arc Welding; Resistance Welding.

Part Two — Types of Resistance Welding Work: Spot; Projection; Seam; Butt; Flash; Duty Cycle.

Part Three—The Ignitron and the Thyraton: Fundamentals of Electronic Tubes; Ignitron; Thyraton.

Part Four—How the Flow of Resistance Welding Current is Started and Stopped.

Part Five—How the Amount of Resistance Welding Current is Controlled: Phase Shift Heat Control.

Part Six — Electronic Timing Controls in Resistance Welding: Basic Principles of Electronic Timing; Synchronous-Precision Weld Timer; Nonsynchronous Timer; Sequence-Weld Timer.

Part Seven—Energy-Storage Control: Capacitor-Discharge Type; Magnetic Type.

FRISCO LINES

one of a long list of Mississippi's assets

Not the least of the many assets which Mississippi has to offer you is Frisco service. Traversing the northeastern part of the State, Frisco's main line serves two of Mississippi's nearby large metropolitan markets—Memphis and Birmingham . . . helps integrate Mississippi's transportation facilities with those of the entire Nation.

FRISCO LINES

ST. LOUIS-SAN FRANCISCO RY.

MISSISSIPPI OFFERS YOU:

- — A plentiful supply of intelligent native-born labor
- — Abundant natural resources — oil, minerals, timber
- — Natural gas, from the world's largest gas fields
- — Diversified agricultural products—cotton, grains, hay, vegetables, livestock, tung oil
- — Friendly citizens, helpful legislation
- — Low-cost electric power
- — Annually maturing forests and agricultural products, easily available for conversion into industrial goods
- — Rapid transportation facilities—hardsurfaced highways, navigable waterways, airlines, railways — including mainline service of FRISCO LINES

HEADS VIRGINIA TRANSIT

WARREN RANDOLPH POLLARD, 47-year-old transportation manager of the Georgia Power Co., has been elected president of the Virginia Transit Company with headquarters in Richmond. He will take over his new duties January 15, 1946.

Elected at a board of directors meeting December 14, Mr. Pollard will succeed Brownlee O. Currey, of Nashville, Tenn., who has been serving temporarily as president of the company since December 29, 1944.

A native of Jersey City, N. J., Mr. Pollard has lived in Atlanta, Ga., since 1903. He was educated in public schools there and was graduated from Georgia Tech in 1920 with a degree in electrical engineering. He served as student engineer with

W. R. Pollard

the General Electric Company for two years.

In 1922 he joined the Georgia Power Company as design engineer and served in various engineering positions before becoming transportation manager in 1936, the position he now leaves to accept the new post.

A prominent figure in the affairs of the American Transit Association, Mr. Pollard is a regional vice-chairman and a member of the executive committee of the board of directors. He has been a leader in modernization of transit equipment and introduced the world's first air-conditioned trolley coach in Atlanta last summer.

In Atlanta he has been active in civic affairs. He was general chairman of the 1945 Red Cross Campaign along with Bobby Jones, famous golfer, and Louis Brooke. He is a past chairman of the Chamber of Commerce, a member of the board of directors of the Atlanta Tuberculosis Association, a member of the board of directors and of the Honor Court of the Boy Scouts of America, a member of the board of directors of the YMCA, a member of Rotary, of the Capital City Club and of the Masonic Club and Sadis Lodge.

His wife is the former Miss Margie B. Taylor, of Atlanta. They have two sons, Warren Randolph Pollard, Jr., and Charles Alec Pollard. Both sons are in the Navy.

In his new position, Mr. Pollard will have operational control of the transit systems in Richmond and Norfolk. He will make his home in Richmond.

Power Official Elected

Lewis M. Smith, Birmingham engineer and civic leader, who has been associated with the Alabama Power Company since 1923, has been elected vice-president of the company. In September, 1944, Mr. Smith was appointed public relations director of the company, a position which he will continue to hold. Along with other important activities for the company Mr. Smith keeps in touch with professional, scientific and technical societies designed to advance science and art.

Georgian Heads F. S. A.

Dillard B. Lasseter of Atlanta, Ga., has been appointed Administrator of the Farm Security Administration in the Department of Agriculture, succeeding Frank Hancock, who resigned to return to private business.

A native of Vienna, Ga., Mr. Lasseter for the past several years has been regional director for War Manpower Commission's Region 7 with headquarters in Atlanta.

-:- TRADE -:- LITERATURE

OIL, GAS CHART ISSUED

The Tennessee Division of Geology, Room G-5, State Bldg., Nashville 3, Tenn., has released a new oil and gas chart, priced at 50 cents a copy, covering the northern Cumberland Plateau area. Locations of drilled wells are charted together with tabulated data on results of drillings. Columnar sections, descriptions of formations and a brief history of explorations in the area are presented.

HOW TO MAKE TIRES LAST

A revised truck tire manual has been issued by the Rubber Manufacturers Association, 444 Madison Ave., New York, N. Y., designed to bring together in one volume previously published material on the care and maintenance of heavy duty tires. The manual is illustrated by photographs and diagrams and contains sections bearing on: Overloading, overinflation, underinflation, effects of speed, starts and stops, temperature, road surfaces, mechanical irregularities contributing to tire wear, tube mounting, dual tire matching, driver habits and inflation tables. Entitled, "How to Get Extra Service Out of Truck Tires," the manual is being distributed to purchasing agents, chief engineers and sales and service managers of truck and trailer manufacturing concerns. Tire companies are handling the distribution to their dealers.

A NEW BULLETIN BY AMERICAN LAVA CORPORATION

Bulletin No. 444, recently published by the American Lava Corporation, Chattanooga, Tenn., is a valuable tool in the hands of engineers, designers and research men. Also helpful for purchasing agents.

AlSiMag Ceramic insulator bodies, each with its particular physical and electrical characteristics, are concisely described and the uses indicated.

Typical designs taken from a roster of more than 25,000 distinct items are splendidly illustrated—in groups of applications covering electrical, electronic, industrial heating, chemical, automotive and other fields, property charts and other technical data.

CHARLOTTE ISSUES BOOKLET

Charlotte, N. C. has celebrated its entry into the 100,000 population class by the issuance of a booklet entitled "100,899, Queen City of the South." The classification, based on the 1940 census, shows the North Carolina city to have worked its way forward to the 91st city in the United States. The booklet points out that it expects early additional advances as it turns to a peacetime economy with prospects for many new manufacturing, distributing and retail businesses. The booklet is generously illustrated with views of institutions, recreational facilities, and industrial establishments.

Ramie Decorticator

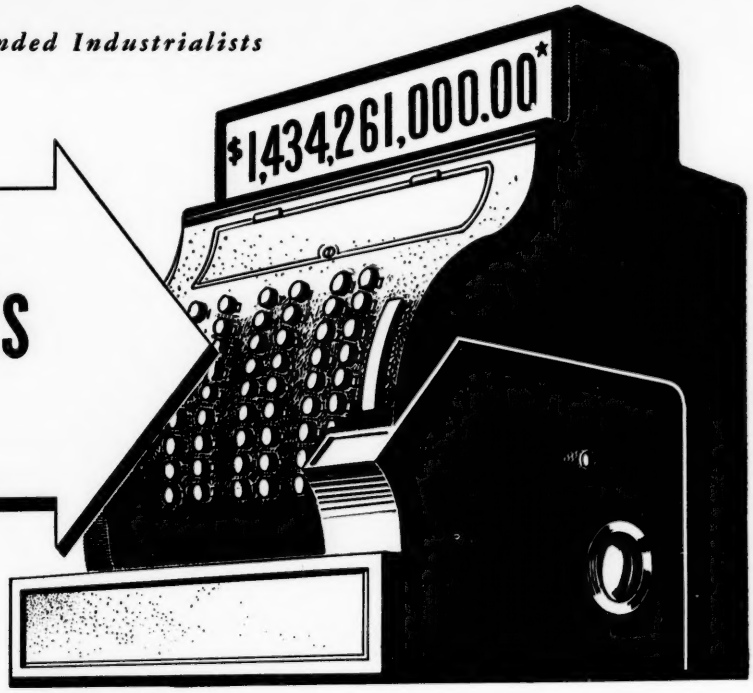
(Continued from page 126)

backing up along the drive shafts, for the manufacture of halyards and other naval cordage, for fire hose which, unsealed by rubber, does not leak, and for parachute harnesses. These wartime uses will continue and be expanded.

The leaves of the plant when dehydrated produce good cattle and poultry meal. Ramie meal has 68.4 milligrams of carotene a pound. This is an important source of vitamin A and performs a protective function. The protein content of ramie is 25.5 per cent. Ramie meal has much fat content.

An Invitation to Sales Minded Industrialists

LOOK AT THE LOS ANGELES MARKET



★ 1944 RETAIL SALES

In retail sales it is the giant of the Pacific Coast... $1,434,261,000.00 in 1944. Even on a national comparison, it is exceeded only by New York and Chicago.

This is significant news for sales minded industrialists, because here is a key outlet for merchandise.

Consider, too, the fact that California is second in retail sales among all the 48 states, then note this strategic fact about Los Angeles: *four of every ten persons in California are within an hour's drive of the city's center.*

For reaching foreign markets, particularly the Pacific Basin nations with their 750,000,000 men and women, Los Angeles offers the special inducement of a harbor that had established Pacific Coast leadership long before the special demands of wartime shipping had developed.

If your business is consumer goods, or supplying those who produce consumer goods, this statement is doubly important: Los Angeles is the nation's third market... the West's first market.

Let us tell you why, for this and other basic economic reasons, it will pay you to locate your plant in this rich market center.

Los Angeles City-Owned
DEPARTMENT OF WATER AND POWER
207 South Broadway, Los Angeles 12, California
"Serving the water and power needs of 1,700,000 citizens"

Los Angeles OFFERS INDUSTRY:

1. Rich market, expanding with the Westward trend
2. West's largest population and largest supply of skilled labor
3. A home owning community where people prefer to live and work
4. Lowest general power rate of any major U. S. industrial center
5. Water supply ample for city of 7,750,000, at reasonable rates
6. Room for plant expansion and decentralization
7. Low construction costs; year 'round production schedules
8. Economic stability through diversified industry
9. Magnificent harbor; springboard to all the Pacific nations
10. Accessibility to the storehouse of raw materials in the West and the Far East

FOR BUSINESS EXECUTIVES...

For reliable, complete information about this industrial metropolis, ask to have us reserve you a copy of "F.O.B. LOS ANGELES," a new brochure now in preparation. Just sign and attach to company letterhead.

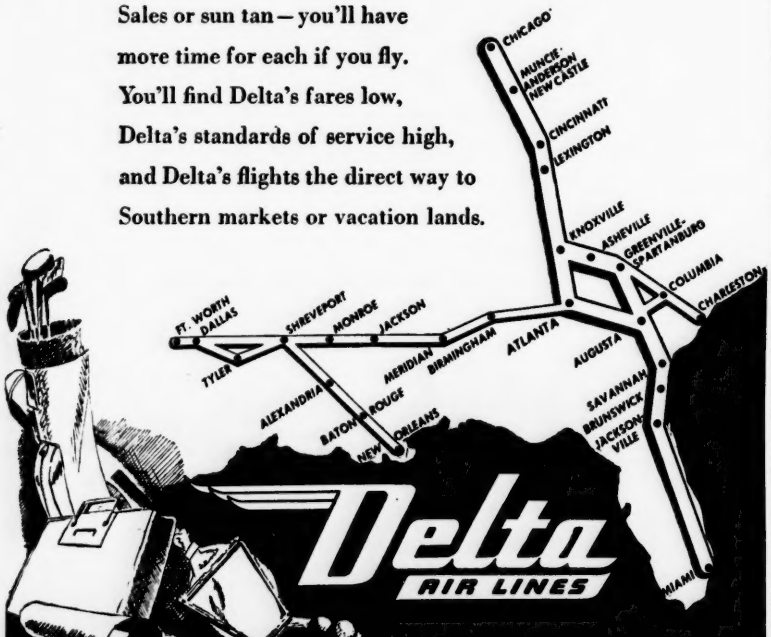
NAME _____

TITLE _____

MR

Los Angeles 1st IN THE WEST 1st IN YOUR INDUSTRIAL FUTURE

Sales or sun tan—you'll have more time for each if you fly. You'll find Delta's fares low, Delta's standards of service high, and Delta's flights the direct way to Southern markets or vacation lands.



General Offices: ATLANTA, GA.

SOUTHERN INDUSTRIAL EXPANSION

(*Continued from page* 122)

County.

WILMINGTON — Mill—Industrial Properties, Inc., building new hosiery mill at Wilmington.

SOUTH CAROLINA

COLUMBIA—Addition—Key Candy Co., let contract at $17,700, for addition to warehouse.

HARLEYVILLE—Plant—Carolinas Cement and Lime Co., incorporated with J. Ross Hanahan, Charleston, as President, plans plant for manufacture of agricultural lime; will also manufacture commercial lime for building and other purposes; capital $1,500,000.

LANCASTER—Springs Cotton Mills building new bleaching and dyeing plant.

LAURENS — Addition — Laurens Glass Works, let contract at $600,000 for new buildings and additions to existing buildings..

ORANGEBURG — Plant—Gair-Santee Corporation, has completed negotiations with South Carolina Public Service (Santee Cooper) Authority, which will result in the erection of a $12,000,000 paper board and box factory located on 300 acre site located on Lake Marion, the upper reservoir, 14 miles from Orangeburg; will also erect model village of 500 homes; power for the village at Santee and other houses will be from Santee-Cooper; a public harbor to be provided with the depth of 12 feet.

PACOLET — Plant—Pacolet Manufacturing Co. is building water filtration plant for mill.

ROCK HILL—Plant—The Celanese Corp. of America, plans to construct plant at cost of more than $10,000,000, to manufacture cellulose acetate and celanese yarn.

SPARTANBURG—Ice Plant—Spartanburg Ice Co., M. Ramsey, Mgr., let contract for construction of ice plant.

SPARTANBURG — Improvements — The Beaumont Manufacturing Co., spending $250,000 on improvement program.

TENNESSEE

CHATTANOOGA—Building—Austin Motor Sales Co., let contract at $60,000, for auto sales and service building.

CHATTANOOGA — Building—Lookout Oil and Refining Co., plan improvement and expansion program, calling for expenditure of $60,000 approximately.

CHATTANOOGA — Building—Moore Brokerage Co., plans erection of modern warehouse building at cost of $35,000.

CHATTANOOGA—Radio Station—Federal Communications Commission, Washington, D. C., granted permit for new radio station to Tennessee Valley Broadcasting Co.

DAYTON — Plant—Dayton Coal and Iron Co., has acquired approximately 30,000 acres of mining properties in Rhea, Bledsoe and Meigs Counties in Tennessee and Walker and Gordon Counties in Georgia; will erect $40,000 plant in which materials will be processed for concrete to be used in manufacture of building blocks.

JACKSON — Factory — Jackson Building Corporation plans factory building to cost $100,000 of brick.

KNOXVILLE—Expansion—American Telephone and Telegraph Co., planning a 10-year expansion program, involving wireless phone and television, costing several million dollars.

MEMPHIS — Building — General Electric Supply Co., let contract, for erection of new $75,000 building.

MEMPHIS — Plant — Cleveland Container Co., plans establishment of a $300,000 plant for manufacture of plastic articles and paper cans and containers; acquired former Caine Steel Co. plant, and will expend $250,000 for remodeling plant and installing machinery.

MEMPHIS — Plant—Valley Fibre Box Co., plans new plant at cost of $300,000.

NASHVILLE—Addition—Happy Day Laundry, let contract at $12,000, for addition to present building.

NASHVILLE — Plant—Blazer Brothers, let contract at $10,000 for building to be used as a rug cleaning plant.

TEXAS

AMARILLO — Terminal — Southwestern Greyhound Lines, let contract at $125,000 for

(*Continued on page* 142)

Lumber Treating Plant

(*Continued from page* 121)

and will have a monthly payroll averaging $15,000 to $22,000, according to Paul Wayman, vice-president and general superintendent of the treating company's plants. Mr. Wayman reports that approximately one-half to two-thirds of the equipment planned for installation will be ready for operation when the plant opens, the remaining machines and processing units to be added as the manufacturers are able to make deliveries. Like the American Lumber and Treating Company at Gainesville, Fla., part of the facilities of the Florence plant will handle the treatment of ties, timbers and lumber for the Atlantic Coast Line under a contract with that railroad.

In explaining the relationship between his firm and the lumber industry, O. W. Boehm, Southeastern district sales manager, declares, "Our operating and sales plan is unique in the wood-treating industry. We engage only in pressure-processing wood for others, and—with the exception of poles—do not buy or sell any forest products. Our services are available for the use of others. Through this 'service station' method of operation, the company's plants in effect belong to the users without competition from the treating company itself."

A spokesman for the Atlantic Coast Line in commenting on the plant states that the railroad had worked closely with the treating company in finding a suitable location for this plant and that Florence appeared to offer a combination of advantages for operation which were to be found in no other locality.

Among other considerations, the spokesman said, the plant is so situated that it will not only be in a position to serve the interior sections of the Southeast, but is advantageously situated with respect to supplying the Southeast coastal area, which is expected to show material expansion during the postwar years.

Dallas T. Daily, general industrial agent for the Seaboard Air Line, states, "The American Lumber and Treating Company has admir-

(*Continued on page* 138)

● It's a fact, that valve purchasers actually *pay less* for Lunkenheimer Valves—because these quality-built Valves give definitely *better service, longer service, more trouble-free and economical service.*

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Lumber Treating Plant

(*Continued from page* 137)

ably met the wartime challenge for treated materials. Now that the war is over and with the release of critical materials, this concern, with its new plant at Florence and plants already in operation throughout the nation, will be in a position to meet the increased demands for treated lumber necessary for peacetime construction."

The American Lumber & Treating Co. has announced that it will also open a plant at Baltimore, Md. "War time developments in uses for pressure treated lumber indicate a greatly expanded market in both the industrial and home construction fields," according to J. F. Linthicum, president. Capacity will be about 2,000,000 board feet monthly.

Both the Baltimore plant and the South Carolina project will be equipped to pressure treat all types of commercial lumber with coal tar creosote, Wolman salts or Minalith salts. American Lumber and Treating Co. now operates nine plants throughout the country. Expansion of facilities on the Pacific Coast is also planned but not yet ready for announcement, Mr. Linthicum said.

Meanwhile, Mr. Linthicum pointed out, latest reports from the United States Forest Service showed an upswing in production of pressure treated lumber in 1944 when the output was approximately two hundred million board feet above 1943. Peak Production, 3,828,000,000 board feet, was achieved in 1941, due to widespread use of treated lumber in war construction.

The Veteran Returns

(*Continued from page* 124)

in a clerical position, and he was given office work in the small department which happened to be partitioned off from the main section of the office. The veteran liked the distinction of "mental" work as well as white collar prestige, even though he received no higher salary. He soon adjusted and hasn't been heard from since.

A veterans' employment scheme that has attracted much attention is the "Peoria Plan" adopted by business firms in Peoria, Ill., and worked out in most detail by Caterpillar Tractor Co. Company engineers catalog every job on the basis of physical ability required and then obtain the foreman's opinion on their decisions. Supervisory employees constantly re-evaluate individual workers' abilities so they can be advanced to better jobs.

C. C. Schlink, Caterpillar's employment coordinator, says, "Nearly all veterans have a certain degree of nervousness when they return which they quickly lose as they become adjusted to normal conditions." To illustrate this problem he tells the story of one employe who was stationed about 30 feet from a giant hammer, whose sound reminded him of battle noises. When his foreman noticed that this distracted him and reduced his efficiency, he was moved to a new post and now does excellent work.

Just as important as helping the returning veteran find his correct spot in the plant is the foreman's responsibility in seeing that fellow

(*Continued on page* 167)

NATURAL GAS

A fuel whose value has been proven by years of use in a most diversified line of industrial applications.

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SOUTHERN NATURAL GAS COMPANY

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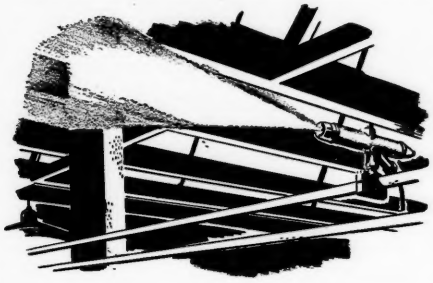

Mist, sprayed in process plants requiring high humidity, is vital to the quality of many products. But, it raises havoc with the wood structures. And steam and chemical-laden vapors in wet process plants cause ordinary lumber to go to pieces in a hurry.

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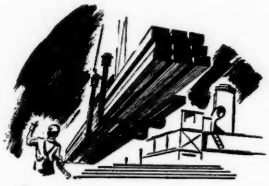

Building with wood means ease and speed of erection, light weight, resilience, high insulating value, paintability, low first cost and . . . when Wolmanized . . . long life.

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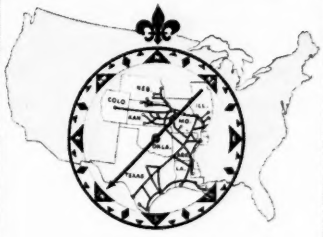

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So if you're planning a new factory or branch, or looking for new warehouse facilities or distribution centers, make this your first move: Write or wire Industrial Development Department, 1706 Missouri Pacific Building, St. Louis 3, Missouri; or Industrial Development Department, Missouri Pacific Lines, Union Station, Houston, Texas. Your inquiry you may be sure, will of course be treated in the strictest confidence.

MISSOURI PACIFIC LINES

MISSOURI PACIFIC LINES — NOW MORE THAN EVER *"A SERVICE INSTITUTION"*

Fair Employment Practice

(*Continued from page* 120)

experience, skill, etc., in industry. No one has seen fit to object to such sub-dividing for the sake of convenience or for other practical reason. Yet, taking their cue from the leftist race-agitators, our intellectuals in the labor movement somehow find it immoral to segregate, as Nature herself has done since the dawn of history, on the basis of race.

In thousands of test cases it has been found that 95% of all negro-haters can be "cured" through the natural-assimilation method *if the element of force is absent.* In the large Northern cities racial problems are being solved in this fashion on a practical scale. Not only in industry but in the fields of housing, religion, politics, etc., whites and negroes are associating together in perfect harmony when common sense and imagination are applied instead of crack-pot social dogmatisms, which seek to compel by legislation that which is best accomplished by free-will action.

Racial intolerance is an emotional malady, and it cannot be curbed through legislation any more than drunkenness was curbed by the Volstead Act. When world peace is restored and we can consistently preach against hatred of *all* races and peoples then we will again make headway with our "brothers-under-the-skin" thesis. But at a time when all the world and its races are entangled in a hopeless criss-cross of deliberately-spawned hatreds we are foolish indeed to saddle ourselves with legislation that can only ensure the continuation of the same kind of hatreds.

Is life so dear, or peace so sweet, as to be purchased at the price of chains and slavery? Forbid it, Almighty God! I know not what course others may take, but as for me, give me Liberty, or give me death!

—*Patrick Henry.*

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THE NORTH CAROLINA GRANITE CORP'N.
Mount Airy, N. C.

Southern Research Institute

(*Continued from page* 119)

research available to the smallest of manufacturers.

As this is written, Southern Research Institute has seventeen active projects under way, all represented by formal agreements, while a number of service accounts are being handled on a contingent basis. Four of the largest sponsors have either entered into two-year contracts or have provided funds for renewing their projects for a second year. Two sponsors whose assignments were completed recently have entered into new contracts or have provided funds for renewing their projects a second year. Two other sponsors whose assignments have been completed have entered into new contracts for research work along related lines. One government contract, dealing with a new treatment for burns, will be completed by the time this appears in print.

All contracts between the Institute and sponsors are held in the strictest of confidence, but five of them, all nationally known, have granted permission to disclose their identities. They are: National Peanut Council, Atlanta; Perfection Mattress and Spring Co., Birmingham; Bristol-Meyers Co., New York; Cinderella Foods, Dawson, Ga., and

(*Continued on page* 144)

Industrial Expansion

(*Continued from page* 136)

terminal.

ARCHER CITY—Gasoline Plant—Warren Petroleum Co., Tulsa, Okla., has let contract at $2,000,000 for construction of repressuring and natural gasoline plant in Archer County.

BEAUMONT—Plant—Kelly's Dairies, Inc., let contract at $35,000 for dairy plant.

BEAUMONT — Television—The Federal Communications Commission announced allocation of four commercial television station channels to Beaumont-Port Arthur area.

CORPUS CHRISTI — Addition — Central Power & Light Co. let contract at $16,349 for additions and alterations to present building.

DALLAS-FORT WORTH — Pipeline — Humble Pipe Line Co., will begin construction early in January of a 275 mile, six-inch gasoline pipe line from Baytown refinery to point in Dallas-Fort Worth area; approximate cost $3,000,000.

FREEPORT—Plant—Dow Chemical Co., let contract for erection of perchlorethylene plant to include piping and equipment.

GOOSE CREEK — Plant—Duke Industries, Inc., has started work on cold storage and food processing plant, cost $80,000.

HEMPSTEAD—Dairy—Spears Dairy, Inc., Houston, has acquired 300-acre farm 8 miles from Hempstead on Navasota Road for dairy; includes installation of dehydrating facilities, new buildings and eight 1000-gallon receptacles for refrigeration.

HOUSTON—Addition—Gulf Publishing Co., let contract at $62,900, for addition to present building.

HOUSTON — Building—Ford Motor Co., Detroit, Mich., let contract for erection of parts building at $750,000.

HOUSTON—Building—Lloyd A. Fry Roofing Co., let contract for factory building to house machinery and equipment; to cost approximately $250,000, and machinery and equipment another $250,000.

HOUSTON — Improvements—Pioneer Bus Co., plans expansion of service at cost of $30,000; will add new suburban routes and purchase additional busses.

HOUSTON—Plant—Carnation Milk Co., has plans in progress for new milk plant, cost approximately $750,000, and $250,000 for office building.

HOUSTON — Plant—C. Glazer let contract for brick manufacturing plant; to cost $25,000.

HOUSTON—Roofing Plant—Lloyd A. Fry Roofing Co. let contract for factory building to cost $250,000.

LONGVIEW — Plant—J. D. Shaw, Tyler, plans packing plant, cost $500,000.

LONGVIEW — Telephone Building—Southwestern Bell Telephone Co. has let contract for building addition and remodeling of present structure.

PORT NECHES—Plant—American Cyanamid & Chemical Corp., New York, let contract for design and construction of chemical plant to manufacture synthetic rubber, plastics, textile and other materials from petroleum and petroleum gases.

SAN ANTONIO—Plant—George A. Bartz & Son, let contract for food plant.

TYLER — Terminal—Sunshine Bus Lines, let contract for bus terminal; estimated cost $25,000.

VIRGINIA

Line—The Carolina, Clinchfield and Ohio Railroad, the Atlantic Coast Line Railroad

(*Continued on page* 167)

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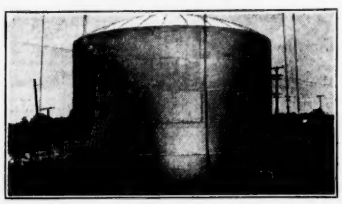

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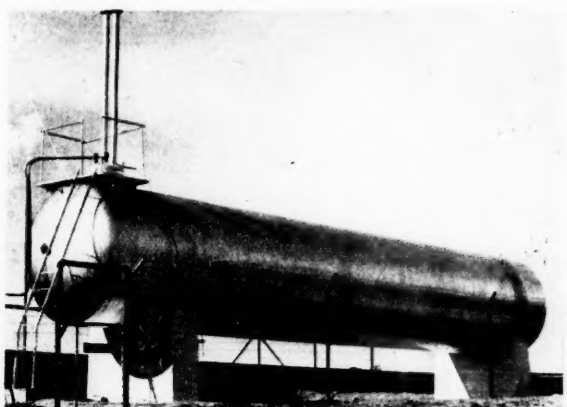

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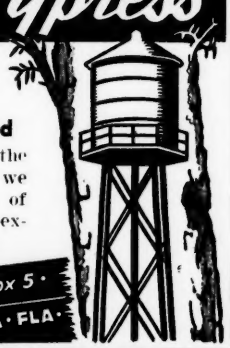

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Southern Research

(*Continued from page* 142)

Waterman Steamship Corp., Mobile. Two of the sponsors sustain national network radio programs directed to products under investigation in the laboratories of the Institute.

The most active group at this time is the biochemical and food research group, consisting of a biochemist, a bacteriologist, dietician and a research assistant. Working as a team, this group is serving five large companies, all representing various phases of the food industry.

Other subjects under investigation by the Institute include: Peanut foods, tobacco, ink, essential oils, paper products, sleep equipment, marine gear, oil exploration, gray iron castings, wood preserving, synthetic drugs, oleomargarine and beverages, to list a few. The objects of these scientific investigations are to improve products, eliminate waste, develop and improve quality, diversify production, and otherwise improve the competitive positions of the sponsors. Reports are prepared at regular intervals, keeping the sponsors fully posted on the Institute's findings and recommendations.

Heretofore, scientific research has been something that was out of the reach of all but the largest and wealthiest of industrial enterprises. The small producers, the so-called "little fellows" who are the backbone of our free enterprise system, have not had the funds to erect, equip and maintain private laboratories for research. Through the facilities of the Southern Research Institute it is now possible for a manufacturer to have research work done at a fee which may not equal a small fraction of the cost of a single piece of laboratory equipment necessary to adequately investigate and solve his problem.

An illustration of this might well be found in the problem of a small paint manufacturer who develops what appears to be an excellent formula for an outside house paint. He uses first-class ingredients and in proportions that his experience leads him to believe are correct. The paint goes on smoothly and dries with a finish superior to other paints on the market. A natural question arises: How will this paint stand up in actual service; what will it look like a few years after applied?

Without investing a dollar in costly testing equipment or employing a high-priced chemist to come into his plant, this small paint manufacturer can take his problem to the Institute where, by means of a special machine, the Weatherometer, he can quickly learn what his new product will look like five, ten or twenty years after application. Further, if his new product breaks down in the tests, shows itself inadequate to the rigors of climate, the Institute is prepared to analyze and check his formula, make changes and generally search out his problem until he has a paint which measures up in performance to the fine appearance of his original mixture. All of this has been done for him in a matter of a few weeks. The old trial-and-error method would have taken years. For all of these services from

(*Continued on page* 146)

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TAMPA SHIPBUILDING COMPANY
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Southern Research

(*Continued from page* 144)

the Institute, the fee will be but a small fraction of the cost of all of the equipment that will be used in solving his problem.

Meanwhile, the Weatherometer is busy compressing years of outdoor exposure into days, helping solve the problems of manufacturers of textiles, roofing materials, leather goods and other products that must be highly weather-resistant to be salable.

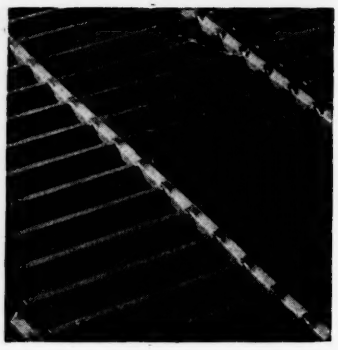
On a recent visit to the Institute, this reporter had the privilege of an extensive tour of its laboratories and facilities. What he saw and heard were impressive, to a degree. That a wide range of work can be undertaken is evident. Here a scale, so delicate that it can detect a weight difference of 1/30,000,000th of an ounce; in another room a machine, busily smoking half a dozen cigarettes at one time, the manufacturer seeking, through scientific research, to learn the cause of a slight irritant in an otherwise perfect blend. In another laboratory a busy young scientist measures the tensile strength of a thread so fine that it cannot be seen without the aid of a powerful microscope.

A step across the hall into another laboratory and we find a special electronic device which produces what may well be called heatless heat, for it can bombard a peanut with ultra short radio waves, roasting the tidbit in a matter of seconds without noticeably heating it. Nearby, clamps hold hacksaws in a rigid position. From the blades wires run to electrical recording devices. These hacksaw blades, heretofore uniformly good, have unexplainably gone bad. The manufacturer doesn't know exactly why, but he does know that he must find out why, and correct the deficiency or go out of business. The institute will find the trouble. The hacksaw manufacturer will not have invested thousands of dollars in equipment, but he will have his problem cleared up before defective blades ruin his business.

We stepped across the yard to a building which was formerly the carriage house of the old mansion. Here we entered a room where constant temperatures can be maintained for indefinite periods of time with variations of less than 1/1000 of a degree, Fahrenheit, while the moisture in the air can be completely withdrawn, or maintained in any desired ratio with the same degree of accuracy with which temperatures are held.

Back in the main building in a bright, corner room we found an eager young assistant, surrounded by test tubes and retorts, distilling several batches of peanut oil. A manufacturer of peanut butter seeks a way to keep his product fresh longer than that of his competitor. An analysis is being made to find just what causes his product to become rancid before it should. The equipment being used cost half as much as the manufacturer's entire plant, obviously a cost too great for him to assume. Of course the equipment is not his, but he is getting

(*Continued on page* 150)



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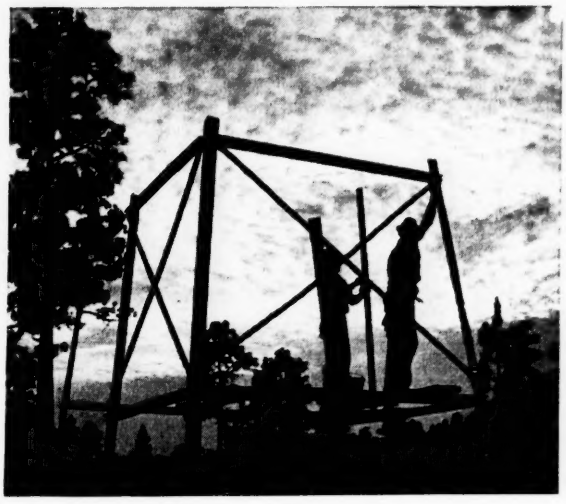

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LAYNE

WELL WATER SYSTEMS
VERTICAL TURBINE PUMPS

Making Talk Cheaper

(*Continued from page* 117)

ble to transmit such wide bands over any great distance with the ordinary type of wire circuits or cables.

Research demonstrated however that the so-called coaxial unit, consisting of a wire conductor held in the center of a conducting tube, would transmit very high frequencies over long distances. Because of an electrical phenomenon known as "skin effect," the messages travel on the inner side of the conducting tube, the center wire completing the circuit. The conducting tube acts as a shield, preventing interference from outside in much the same way that a wheel revolving at high speed prevents a stick being poked between the spokes. The higher the frequency the better the shield becomes.

The first coaxial consisted of a wire centered in a quarter-inch tube by insulating washers spaced at intervals along the wire. It was found that 2,000,000 cycles could be transmitted over this type of unit by installing repeaters to renew the impetus of the current about five miles apart. With closer spacing of repeaters the transmission of even wider frequency bands is possible. It becomes necessary to locate repeaters at closer intervals when transmitting higher frequencies because the loss of current increases as the frequency transmitted increases.

Coaxial development has progressed to the point where cables are now being made with eight coaxial units, each pair of which, with proper additional equipment for dividing the frequencies into carrier bands, and for boosting the current at intervals, will carry 480 messages. Coaxial units will carry a frequency band sufficiently wide, i.e. from two to three million cycles, or more, to permit the transmission of television. Strict precautions must be taken to insure a high degree of uniformity in the quality and dimensions of all materials going into the coaxial, as well as in the manufacturing operations.

The manufacture of coaxial cable requires great care, constant attention and a real interest in all its operations in order to insure satisfactory performance by the finished product. However, when all these considerations are present, the result, representing as it does the triumph of man's mind over the problem of overcoming distance as an obstacle to audible and visual communication by wire, is something of which we can well be proud.

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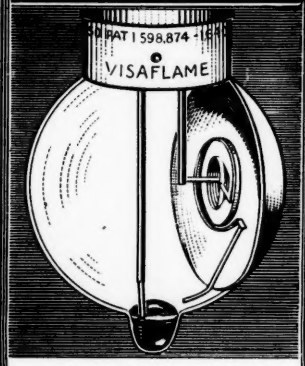

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Southern Research

(*Continued from page* 146)

the same good from it as though he had purchased it. The fee he will pay, which includes the services of the Institute's staff, will be but a fraction of the cost of the elaborate outlay of equipment that serves him.

From the delicate scales previously mentioned, to a press which can can exert hundreds of tons of pressure to the square inch, the Institute has new and high-grade equipment and new acquisitions are constantly coming in.

A technical and scientific library of several hundred volumes, scientific papers and other research data is housed in the main building, while a special arrangement with the Library of Congress in Washington enables the Institute to procure in a very short time microfilm reproductions of any special or rare volume the staff may need. A projecting machine, operated by the librarian, enables the staff to quickly read and study any portion of the film which deals with the special problem under investigation.

That the Institute is measuring up to expectations is evidenced by the fact that several of its discoveries for sponsors are now included in manufacturing processes.

In an age that has produced the atomic bomb and no doubt will see

(*Continued on page* 152)

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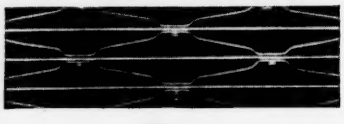
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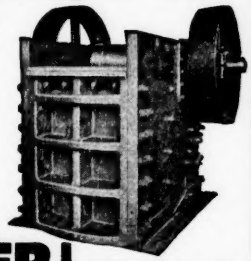

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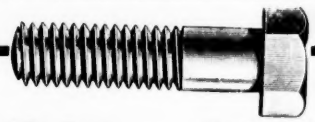

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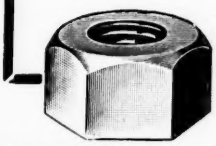

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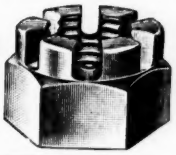

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Coaxial Cable a Factor In Television Transmission

THE coaxial cable making up the long distance network of the American Telephone & Telegraph Co., contains special copper tubes capable of carrying radio frequency waves. Each of these tubes is about the size of a lead pencil, with a single wire held in its center by disc insulators. Such a coaxial pipe provides a private path through the ether in which radio waves can be guided, instead of spreading in all directions as in ordinary radio broadcasting. Because of the restricted conditions within the pipe, these radio waves weaken very rapidly as they travel and must be strengthened by vacuum tube amplifiers at intervals of about five miles.

The terminal equipment involved in the coaxial cable includes many complicated electronic devices which have been developed in the Bell Telephone Laboratories in the course of their researches on long distance telephony. By means of this equipment, it is possible to select from the frequencies transmitted over the coaxial cable any one of a number of "programs" (or telephone messages) in the same way in which programs can be selected on a home radio receiver. In this way, it is possible to secure 480 separate telephone message paths over a single coaxial pipe. To provide large numbers of long distance telephone circuits, such cable is now being installed on important long distance routes of the United States.

Television broadcasting requires a very wide band of radio frequencies—about four times the total frequency band which is allocated to all the radio broadcasting stations in the country. If the frequency band carried along a coaxial pipe is transmitted as a whole, instead of being broken up into hundreds of telephone circuits, coaxial cable can carry the complex signal necessary for television. Such an arrangement of coaxial cable facilities was used for the Army-Navy game between Philadelphia and New York as well as between Washington and New York for the experimental intercity television service soon to be introduced.

Southern Research

(*Continued from page* 150)

the harnessing to industrial purposes the energy of the atom, there can be little doubt that the future industrial growth of the South is in the hands of the research scientist. Through his efforts in the laboratory will evolve the processes which will make the most of the vast agricultural, forest and mineral resources of the region.

An inspiring note of the Southern Research Institute, dedicated to the industrial advancement of the South, is the devotion of the scientists to the work that they do and that lies ahead. With one or two exceptions, all of them were educated in southern colleges and universities, and all had been "exported" to other parts of the nation to find employment in the research departments of some of the country's largest industrial concerns. These southern men and women of science are back home now, fired with an enthusiasm that bodes well for the expansion—through scientific research—of the industries of their homeland.

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BILOXI, MISSISSIPPI — ON THE GULF OF MEXICO

Plant Atkinson Largest in Georgia

(*Continued from page* 113)

the new unit consumes 17,280,000 cubic feet each day. All three units together use 59,280,000 cubic feet per day. This is about the same as the total consumption by all Atlanta gas customers on a summer day.

The vast generator room, in which the energy of steam becomes electricity, is 356 feet long, 64 feet wide and 63 feet high. Massive as they are, the three 60,000 kilowatt generating units in line seem dwarfed by its spaciousness. Yet each of these humming machines has a capacity of 100,000 horsepower. This is the heart of Plant Atkinson. All of the tremendous equipment in the boiler house is operated to the sole end of turning these generators at great speed.

Concealed from the observer as he stands on the generator room floor, the big steam lines from the boilers enter the turbines from beneath. Each turbine consists of a series of blades mounted on a long shaft. The shaft of the new turbine, for example, has 28 sets of blades. As the high-pressure steam rushes into the turbine, it strikes the blades and turns them, causing the shaft to rotate rapidly.

Mounted on the same shaft at the generator end of the unit are a number of powerful electric magnets, called field windings. As the shaft spins, these magnets revolve within an enclosure of coils, producing an electric current. Each generator produces 60,000 kilowatts at 13,800 volts. In the big transformers of the switchyard outside the plant, this power is stepped up to 110,000 volts for efficient transmission over long distances.

The new generating unit is strikingly different from the others in appearance. It is somewhat smaller in bulk, but its capacity is the same, due to recent improvements in engineering design that yield greater efficiency.

For example, the new turbine is divided into high pressure and low pressure chambers in which an increased amount of energy is derived from the steam. The steam enters the first chamber at a pressure of 850 pounds per square inch and at a temperature of 900 degrees; in the other turbines the pressure is only 450 pounds per square inch and the temperature is 725 degrees. In the new turbo-generator the rotor, or turning part, weighs 51,500 pounds as compared with 160,000 pounds in the older ones, but it revolves twice as fast—3,600 revolutions per minute instead of 1,800. The new unit uses 530,000 pounds of steam per hour; each of the others uses 700,000 pounds. These differences, plus improvements in the boiler and other equipment, increase economy of operation. Plant Atkinson's first and second units burn 1.11 pounds of coal to generate one kilowatt hour of electricity; the third unit consumes only nine-tenths of a pound.

To prevent the friction and heat that otherwise would result at the terrific speed of 3,600 revolutions per minute, the new generator is enclosed in a tight housing that con-

(*Continued on page* 156)

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—on the Gulf Coast—

HARRISON COUNTY

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That portion of U. S. Highway 90, (formerly known as the Old Spanish Trail), in Harrison County is one of the most beautiful drives in America. It is rich in romance and historical interest.

Biloxi, Gulfport, Pass Christian and Long Beach welcome new industries. You will find intelligent labor, reasonable taxes, a friendly attitude upon the part of city, county and state officials, and vast natural resources.

HARRISON COUNTY BOARD OF SUPERVISORS

Dewey Lawrence, District 1; Oscar Cassibry, District 2; Hugh Fitzpatrick, District 3; W. M. Ladnier, District 4 (Chairman of the Board) and Luther Blackledge, District 5. Cooper Darby, Chancery Clerk. Gulfport, Mississippi, County Seat.

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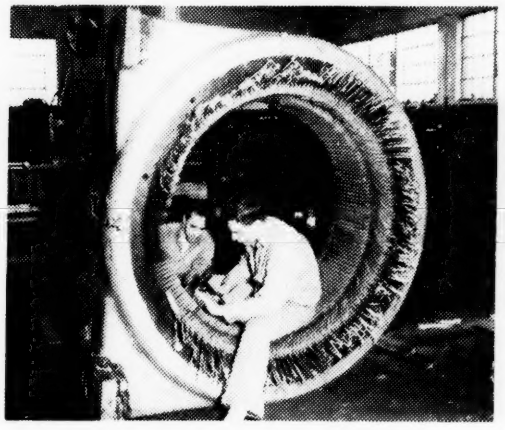

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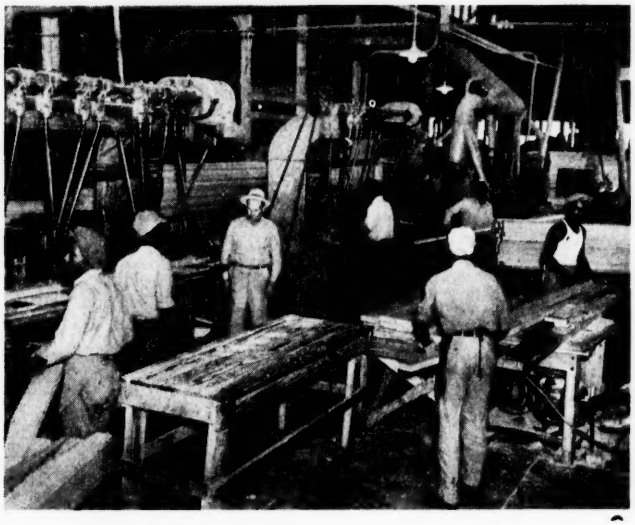

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Plant Atkinson Largest in Georgia

(*Continued from page* 154)

tains an atmosphere of cooled hydrogen gas, which is much lighter than air.

After the steam goes through the turbine, its usable energy is spent. It has done its job, but it is not through. Now it is condensed back into water and returned to the boiler to repeat the cycle through which it has been before. The same water, the same steam, is used over and over again.

The reconversion of steam to water takes place in the giant condenser underneath the turbine. This contains 8,180 tubes, each more than 22 feet long, through which cool river water is running constantly. As the steam flows about these tubes it is cooled and becomes water again. Total length of the tubes in the new condenser is 34½ miles and the cooling area is 47,000 square feet. The aggregate length of the tubes in all three units is 131 miles.

The river water used for cooling flows through a tunnel 22 feet below the bottom level of the condenser pit, which itself reaches 38 feet under the ground level. In one minute 59,000 gallons go through the new condenser and 225,000 gallons run through all three. The total for the entire plant is 324,000,000 gallons per day — more than six times as much water as is used by the Atlanta water system. But Plant Atkinson does not consume this water. All of it goes back into the river at once.

In front of the condenser are two circulating pumps, driven by 250-horsepower motors, that force the water through the condenser tubes. There are also two condensate pumps which impel the condensed steam through feed water heaters to the boiler feed pumps on the generator room floor. These in turn pump it back to the boiler. To one side of the condenser pit is the evaporator, which distills the small quantity of river water that is needed to make steam.

If the visitor to Plant Atkinson steps outside the great generator room and looks upward at the rear of the building he sees an unfinished surface. He may wonder why the other three sides are of a permanent brick construction and this one side is enclosed by a temporary wall of cement-asbestos sheeting. The future is the answer. It has long been planned that still another generating unit will be built, in advance of the time when its output will be required. That unfinished end of Plant Atkinson is a challenge to the future. When Georgia needs the power there another mighty power plant will be built.

Citrus Cooperative Expands

(*Continued from page* 114)

Processed through a set of quadruple evaporators, it is put through a finishing pan and emerges as citrus final syrup. Stored in a 50,000-gallon tank, the syrup is shipped in tank cars or trucks.

Liberty exists in proportion to wholesome restraint; the more restraint on others to keep off us, the more liberty we have.

—*Daniel Webster.*

MISSISSIPPI'S Great Southeast

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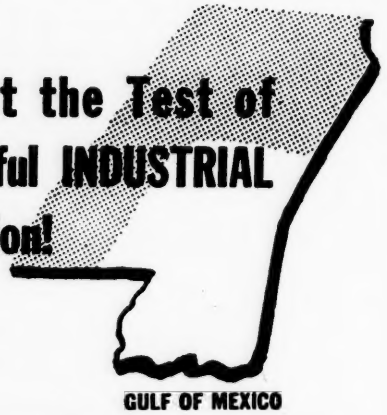

Mississippi's Great Southeast has all the fundamental requirements of modern industry. Here industry finds:

An endless supply of annually maturing raw products and natural resources desirable for conversion into industrial goods;

Alert community interest and native-born population which provide a natural stimulus to profitable industry;

A network of railroads, hard-surfaced highways, airlines and deep-water harbors for rapid transport;

A moderate, breeze-cooled temperature which stimulates production and good health;

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Strategic LOCATION

with respect to both raw materials and markets, plus unsurpassed transportation by rail and water, make Vicksburg an ideal location for postwar industry.

The counsel and credit of two strong, progressive banks will make opportunity mean more.

The First National Bank & Trust Company
The Merchants National Bank & Trust Company

THE VICKSBURG CLEARING HOUSE ASSOCIATION

Vicksburg, Mississippi

Members of Federal Deposit Insurance Corporation.

South Sharing DuPont Growth

(*Continued from page* 111)

Administrative personnel will be accommodated in a two-story office building, 40 by 140 feet. A one-story service building will house a fully-equipped, modern hospital, time-keeping facilities and a gate house.

Other units include an up-to-date machine shop, a modern cafeteria, steam power plant with necessary water treatment facilities, a river pump house, and a large reservoir. The laboratory will occupy a one-story L-shaped structure, 100 by 125 feet.

Operation of the plant is expected ultimately to require modification of the original description of nylon as a product compounded of ingredients derived from coal, air and water. Natural gas will be used for the manufacture of nylon intermediates at the Sabine River Plant. The principal intermediates to be made at this new plant are two complex chemicals known as adipic acid and hexamethylene diamine.

The new plant will produce both of these compounds and will also combine them to form nylon salt. This compound will then be shipped to other plants to be converted into nylon flake for yarn, bristles, and plastic articles.

The Houston Plant is being built on an 822-acre tract, including the former shipyard of the U. S. Maritime Commission on San Jacinto Bay, about 20 miles southeast of Houston on the Houston-La Porte Highway. Five new buildings are being erected and existing structures remaining from the shipyard occupancy are being converted for use in the production of pesticides.

Existing buildings being remodeled include an administration building, gate house, laboratory, warehouse, medical building, machine shop, and a repair and storage garage.

The products to be manufactured at La Porte include phenothiazine, most effective anthelmintic known for the control of internal parasites of animals; also "Fermate" and "Zerlate" fungicides, new organic compounds based on the iron and zinc salts respectively of dimethyldithiocarbamic acid, for the protection of a wide variety of fruits, vegetables, and other crops against attack by fungus diseases.

The Houston Plant will also produce "Arasan" seed disinfectant, effective in the protection of corn, peanuts and vegetables against fungi, molds, and germs; and "Tersan" fungicide for the control of fungi attacking golf and lawn turfs.

At Washington, near Parkersburg, W. Va., a site of about 400 acres has been acquired to provide plant space on which to expand the company's activities in the plastics field.

The Du Pont Company already operates one of the largest plastics plants in the country, located on a sixty-four acre site at Arlington, N. J., and a smaller plant at Leominster, Mass. Neither of these locations provides sufficient space to accommodate the expansion in manufacturing facilities which it is

(*Continued on page* 160)

COLUMBUS AND GREENVILLE RAILWAY COMPANY

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DESKS, TABLES, COSTUMERS
TELEPHONE STANDS
TYPEWRITER TABLES
CHAIRS, ETC.

"Wells-Made Means Well-Made"

DuPont Growth South

(*Continued from page* 158)

now forecast will be required over the next several years.

The new plant site is on a tract of bottom land once owned by George Washington, who received it in a grant of 2,314 acres from Lord Dunmore, Governor of Virginia, in 1772.

Among the first units to be built at the new location will be greatly expanded facilities for manufacturing nylon as a plastic in various forms, "Lucite" methyl methacrylate resin, and the new plastic, polythene. Construction on these units with the necessary service facilities will be started just as soon as materials and labor are available for post-war developments.

Nylon has established itself in an outstanding way in the field of textiles and synthetic bristles. The recent war, however, delayed plans for wider use in the pastics field. Because of its high heat resistance and extreme toughness, work in connection with certain special war uses indicates wide application in the general plastics field. The new plant will provide facilities for manufacturing nylon polymers, bristling filament, sheets, rods, tubes, and molding powders. Prior to the war, "Lucite" molding powder had been adopted for a wide variety of uses.

Polythene, one of the new plastics being developed by the Du Pont Company, is now used extensively in the electrical insulation field and possesses outstanding advantages which should give it an important position in the plastics field generally. Adequate facilities to supply this plastic will be provided.

Beyond these specific projects, Arnold E. Pitcher, general manager of Du Pont's Plastics Department, said that out of the extensive research program which the company has been carrying on in the plastics field for many years, several promising new products are expected to be ready for commercial introduction during the first five post-war years.

"All of this," points out Mr. Pitcher, "indicates the confidence of this company in the continued expansion of the plastics field, and the site acquired at Washington provides adequate space for the very substantial growth for the future."

Two new and improved acid recovery units are under construction at the Du Pont Company's cellulose acetate plant at Waynesboro, Va.

Work on the project, which is an addition to the chemical section of the plant, began last August. The company's Engineering Department is in charge of construction. It is expected that the project will be completed during the first half of 1946.

The new facilities will consist of a number of distillation columns, about 75 feet high, an office for supervisors and foremen, and an employees' change room, with showers. The structures are to be located in the southwest corner of the plant property, approximately 500 feet from the other buildings, and will provide the most modern equipment for the recovery of acetic acid. The recovered acid is reused in the plant's manufacture of cellulose acetate for rayon, plastics, and other materials.

Eternal Vigilance is the price of liberty.—*John Philpot Curran.*

GULFPORT CREOSOTING COMPANY

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●

A. P. SHOEMAKER, JR.
MANAGER

Wages, Prices, Forgotten People

(*Continued from page* 108)

incentive pay. Never was a more dishonest statement made by pseudo economists. The very term "excess profits" means profits above the prewar level. Where did the excess profit come from during the war? It was from the production of war materials. Uncle Sam was the only customer, and the United States Treasury paid the bill out of taxes and borrowed money. If there were excess profits, it was because Uncle Sam paid that much more than he should have paid for the war materials. Of course Uncle Sam took back 90% of it. The important point is, that excess profits during the war period were made on the production of war materials, and not in the production of peace-time goods.

Now Uncle Sam has ceased to be the big, exclusive buyer. Everyone will have to struggle in a highly competitive market for the sale and distribution of his normal products. Very few concerns, if any, will have any excess profits in the near future. If there are no excess profits, then there will be no saving in the repeal of the excess profits tax.

Business is always a struggle for survival. Your competitors are alert and aggressive. You cannot charge anything you please. But, (and here is the rub), if your costs are forced up, you have got to raise prices or perish. If they are forced up too high, you lose your customers. You run into the inexorable law of diminishing returns, and then you perish from lack of customers.

Our business is a fair example. It is not a big business, nor is it exactly small. We do an annual volume of two or three million dollars. We normally employ 1,000 to 1,500 people. We have raised wages and salaries all we possibly could. We had no such luxury as excess profits. In fact, our profit has been far less than normal. Right now, a 10% wage increase would wipe out all the profit. We have only three possible choices. First, do not raise wages any further, and try to stay in business; second, raise wages and also raise prices, and hope to stay in business; third, raise wages and not raise prices, and go out of business. If we should follow the last course, then who would employ the 1,000 or 1,500 people who normally work for us?

You could multiply this illustration thousands and thousands of times. In the midst of a golden opportunity for a long period of prosperity, I am afraid that increased costs, without higher prices, would produce a staggering number of bankruptcies. With higher prices forced by higher costs, the plight of the forty million who were not in the war industries would be increasingly serious. And the fortunes of the old people who live on pensions, and the widows and orphans who are living on annuities, and other people with fixed incomes, would be one of the great tragedies of our time. I hope that some deeply serious consideration can be given to this vast majority of the American people who would be the great sufferers from price increases and fu-

(*Continued on page* 164)

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COMMERCIAL PLYWOOD

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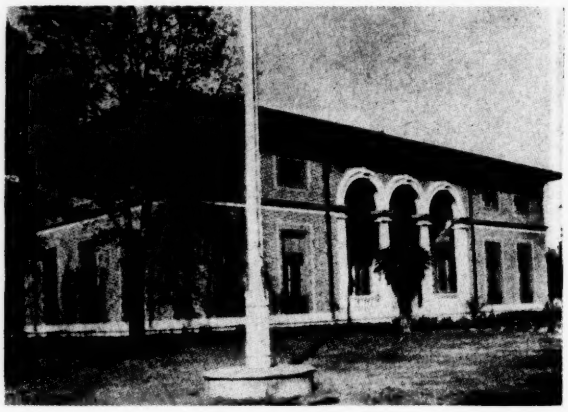

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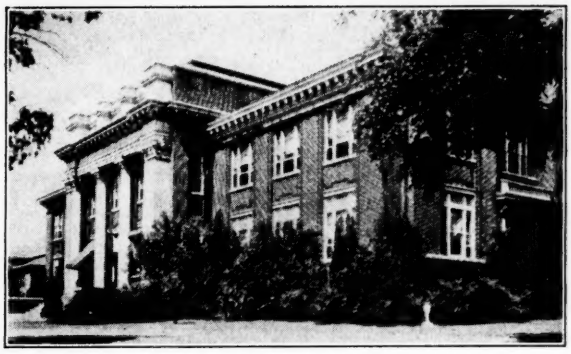

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200 ROOMS AND BATHS

Wages, Prices, Forgotten People

(*Continued fom page* 162)

ther inflation.

Please do not think I am reactionary. I have prided myself on being progressive throughout a long and active life. But this problem seems deadly serious to me, and I am worried about the prospects.

No one has ever found a magic way to get more than one hundred cents out of a dollar. Running a business is something like running a family budget, except it is a larger operation. The concern that spends $1.10 for every $1.00 it takes in will soon be in trouble. One that spends $1.00 for every dollar of income lives a precarious existence, and the inevitable "rainy day" will destroy it. The only concern that remains solvent and keeps on employing people is the one that saves five or ten cents out of every dollar of income. The vast majority of small businesses which employ most of the people, have a thin margin of profit. What happens to them is of enormous importance to this country. Their continued existence as solvent concerns means prosperity for the nation and widespread employment.

Reynolds Leases Arkansas Plants

(*Continued fom page* 115)

243 acres. Structures on the site include 70 buildings, 45 dwellings, 10 covered passageways and two cooling towers. The principal buildings are six structural steel and brick utility structures with a combined floor area of about 60,000 square feet, 23 industrial structures including eight pot room buildings and four engine houses with a combined floor area of about 600,000 square feet.

Machinery includes a diesel power plant housed in four engine houses, aluminum processing facilities consisting of four reduction lines in the eight pot rooms, in which are housed 512 electric cell reduction pots and crushers, grinders, two carbon baking furnaces and other auxiliary equipment for the manufacture of carbon electrodes.

The Hurricane Creek plant is designed for production of alumina, the whitish substance obtained from raw bauxite and later processed into metallic aluminum and also for the manufacture of synthetic cryolite and aluminum fluoride. The plant has a capacity of 3,000,000 pounds of cryolite and 40,000,000 pounds of aluminum fluoride, in addition to the alumina output.

Land at Hurricane Creek embraces two tracts, one of 465 acres on which the plant is located and another of 984 acres used for water supply and also a leased tract for housing facilities. There are approximately 50 buildings, exclusive of housing.

Manufacturing structures at Hurricane Creek include: Alumina plant, 21 buildings, floor area 400,000 square feet; a sinter plant, eight buildings, floor area 140,000

(*Continued on page* 167)

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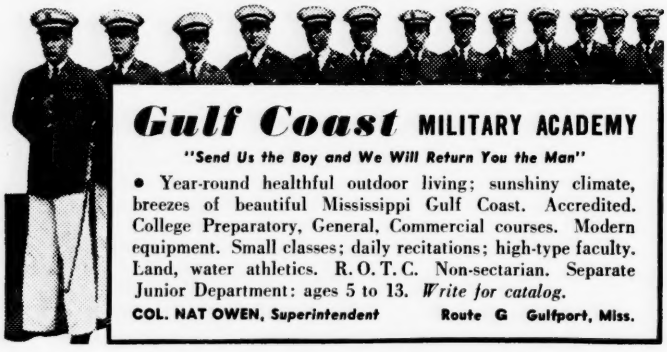

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Pullman, an 80-Year-Old Sleeping Service

(Continued from page 107)

hibition tour that touched 65 cities, this train is claimed as a strong factor in reviving public interest in railroad travel during the 1930's.

At the present time the Pullman-Standard Car Manufacturing Co. is pushing production on contracts involving millions of dollars of modern passenger car equipment for the railroads to use in tomorrow's travel market. The company has so far unveiled 13 new designs, which in addition to sleeping cars and deluxe coaches embrace recreation cars, children's play cars and new type diners. The railroads, who will be the new operators of the sleeping car business will get equipment the Pullman Company was unable to obtain during the war years, as civilian railroad equipment manufacture for United States operation was halted shortly after the Pearl Harbor attack.

The new owners will inherit the job of transporting the millions of troops involved in demobilization. Since Pearl Harbor more than 33 million service men and women have traveled a total of 44 billion passenger miles in sleeping cars during organized military movements. Of about 4,200 sleeping cars, more than three-fifths of the Pullman fleet is engaged in military transportation.

The company also operates 1,200 government-owned sleepers. A total of 151,000 sleeping accommodations are available for the military, as compared with 57,000 accommodations on regularly scheduled trains. Many of these latter are occupied by service men traveling on their own errands.

DEEMER LUMBER COMPANY

MANUFACTURERS OF

Box Shook, Yellow Pine and Hardwood Lumber

DEEMER, MISSISSIPPI

Reynolds Leases Plants

(*Continued from page* 164)

square feet; electrolyte plant, four buildings, 72,000 square feet; utility buildings and 45 four-room houses.

Hurricane Creek manufacturing facilities include equipment needed to carry out the various processes, machine tools including 70 grinders, mills, presses, lathes; laboratory equipment including several hundred items of furnaces, balances, electrical instruments, and cranes and numerous conveyors.

The Veteran Returns

(*Continued from page* 138)

workers have the right welcoming attitude and the proper approach to returning servicemen — most particularly to those who have received physical impairments. A tactful and popular supervisor can do much to smooth the path for a nervous beginner whose approach to a job is complicated by embarrassment or self-consciousness due to an injury.

The matter of introductions to other workers, as well as the daily contact of the foreman and fellow employees with the veteran should convey the friendly assumption that the newly-arrived worker "belongs" and will succeed on his job. Forestalling dissatisfaction that is in the air or unspoken is an old technique of good foremen. In the veteran's case, a friendly, well-timed chat may quickly dispel misunderstandings. Serious personnel problems should be referred back to the proper department.

Industrial Expansion

(*Continued from page* 142)

and Louisville and Nashville Railroad, Washington, asked permission of Interstate Commerce Commission to build 10.2 mile branch line in Dickenson and Wise counties.

LYNCHBURG — Expansion—Allen Morrison Sign Co., Inc., has work underway for $50,000 expansion of manufacturing facilities.

PETERSBURG — Building—Virginia Fibre Corporation, acquired building; will remodel to adapt it to the necessary machinery; manufacture twine cords and woven paper fabric for upholstering trade.

SCOTTSVILLE—Plant—U. S. Rubber Co., New York, has acquired plant at Scottsville, including machinery and equipment; plant will process plastic and synthetic yarn and weave drapery, upholstery and industrial fabrics.

STUART — Plant—Stuart Knitting Co., incorporated by W. L. Penn, jr., with capital of $100,000, to operate knitting plant.

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1—1000 GPM Allis-Chalmers centrifugal fire pump 125# pressure direct connected on base to Allis-Chalmers steam turbine drive.
1—IR 300 CFM cross-compound 300 RPM air-compressor cylinder 11″ and 7″ by 10″ belt-driven by 60 HP Westinghouse 3/60/2300 volt slip-ring motor.
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1—250 HP Casey-Hedges water tube boiler 150#.
1—150 HP Scotch Marine boiler 150#.
1—500 KW GE steam turbine 150# steam condensing direct connected to 500 KW 3/60/2300 volt 3600 RPM GE turbo-generator with Wheeler surface condenser.
3—728 HP each Erie City boilers Type No. 6 S vertical bent tube water tube. ASME code 180# with individual stacks.
1—GE 1250 KW 3 stage steam turbine 150# gage surface condenser direct connected to GE 3/60/2300 volt 1250 KW turbo-generator 1.00% P.F.
1—Westinghouse Extraction Type condensing steam turbine 5# to 20# extraction with surface condenser direct connected to: Westinghouse 940 KVA 3/60/2300 volt generator.
1—GE 600 KW 175# Form B 4 stage surface condenser steam turbo direct connected to GE 3/60/2300 volt 600 KW PF.8 turbo-generator.
1—Atlas steam engine full corliss 14″ x 36″ single eccentric, 11′ x 19″ face fly wheel Pulley.
1—250 KVA Westinghouse 3/60/240 volt 900 RPM generator Serial #2465434 connected by enclosed reducing gear on common CI base to: Westinghouse non-condensing steam turbine Ser. #8718 single wheel type, 5904 RPM complete with Switchboard and belted exciter.
1—150 KW Western Electric belt-driven generator 3/60/440 volt 600 RPM Ser. #36911 with Rails and Switchboard.

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8—5 KW, 110 volt, AC Onan water cooled portable Light Plants, Army type, completely rebuilt, original cost over $1,000.00, our price $450.00 each.

1 Generator, Electric Machinery, Ser. 84186, International 4 cyl. gas engine, Mod. U9, Ser. UCB3490, Motor Ser. UCBM1082, 112/208 volts, 3 phase, 60 cycle, 30 KVA, with Exciter and Voltage Regulator. Completely rebuilt $1,500.00.

1 Generator, American, Mod. 1504-4, Type OG, Ser. 15046, Buda 6 cyl. Diesel, Mod. 6DT389, Ser. 8885, 120/208 volts, 3 phase, 60 cycle, 1200 RPM, 37.5 KVA. Completely rebuilt $2,500.00.

1 Light Plant, Electric Machinery, Ser. 84190, International 4 cyl. gas engine UCV3887, 3 phase, 60 cycle, 125/208 volts, 30 KVA. Completely rebuilt $1,500.00.

1 Generator Set, Electric Machinery, Ser. 2127, Hercules 6 cyl. gas Mod. WXLC3, 3 phase, 60 cycle, 125 volts, 35 KVA with Exciter and spare parts, completely rebuilt $2,500.00.

5 Late style 1500 Watt, 110 volt, DC Kohler Plants, perfect shape, $225.00 each.

PORTER ELECTRIC COMPANY, INC.
612 THIRD AVE., S.
MINNEAPOLIS 2, MINN.
Geneva 8655

Electrical Equipment Coast To Coast

PROMPT SHIPMENT

SLIPRING MOTORS—3 ph. 60 cy.

HP	Make	Volts	RPM. Type
700	G.E.	2200	393 MT-432
260	Burke	2200	600 EMV-65
260	Burke	440	600 EMV-65
50	Chandeysson	440	1800
20	West.	220	575 CW
20	Allis Chal.	440	1130 —
15	West.	220	870 CW
15	G.E.	440	845 I-8
15	Allis Chal.	440	1150

SQUIRREL CAGE MOTORS 3 ph. 60 cy.

	HP	Make	Volts	RPM. Type
2—	150	West.	440	1800 CS
	125	West.	220	1800 CS
	100	G. E.	2200	720 TS
	75	West.	220/440	1800 MS
	60	West.	220	1800 CS
	60	Allis. Ch.	220/440	1760 —
	50/32	G.E.	440	800/640
	50	Chandeys'n	220/440	1800 ..
	45	West.	220/440	850 CS
	30	West.	220/440	1800 MS
2—	25	G. E.	220/440	1800 K
2—	25	West.	220/440	1800 CS
	15	West.	220	450 CS
	15/45	West.	220	425/865 CS
	15	Mutual	440	1200 MC144A
	10	G. E.	220	900 FT
	10	G. E.	220/440	1750 ..
3—	10	West.	220	1800 CS
	7½	G. E.	220	900 FT
	7½	Howell	220	1800 NBR

TRANSFORMERS—1 ph. 60 cy.

No.	KVA	PRI.	SEC.	MAKE
1	7½	2200	110/220	West.
69	7½	1100/2200	110/220	G. E.
29	7½	2200/1100	110/220	West.
8	7½	2200/1100	440/220/110	West.
6	10	2200/1100	220/110	West.
10	10	2200/1100	220/110	G. E.
2	10	2300	220/110	G. E.
1	10	2200/1100	440/220/110	West.
21	15	2200/1100	440/220/110	West.
3	15	2200	110/220	Packard
3	15	2200	110/220	Cr. Wh.
16	18	220	19½/38½	Elec. Furnace
2	20	1150/2300	115/230	Maloney
1	20	2300	110/220	West.
2	20	2200/1100	440/220/110	West.
2	25	2300	110/220	West.
18	37½	2400	480/240	G. E.
3	40	2200/1100	220/110	West.
1	40	1100/2200	110/220	Pittsburgh
1	40	2300/1150	115/230	Maloney
2	50	2200	110/220	Packard
1	50	6600	550/440	Allis Chal.
1	50	2200/1100	220/110	West.
2	50	2200/1100	220/110	Maloney
9	75	2400	240/480	G. E.
3	100	2400	480	Allis Chal.
1	75	2400/4160Y	120/240	West.
6	112.5	2400	240/480	G. E.
3	125	2200	220/440	G. E.
2	150	2200/2300/2400	220/230/240	G. E.
3	250	6600/5940	2300	West.

MOTOR GENERATOR SETS FROM 1 TO 200 KW. AND LARGER BUILT TO SPECIFICATIONS.

Send for complete stock list.

Duquesne Electric & Mfg. Co., Pittsburgh 6, Pa.

D. C. MOTORS

18—New Leland in original cases, 3 HP, 300 V., 2400 RPM, Series wound. May be used as either motors or generators.

NEW ENGLAND BUTT CO.
304 Pearl St. — Providence 7, R. I.

Porter and Vulcan 36″ gauge steam saddletank locomotives, 18 and 17 tons, rebuilt.
Baldwin steam locomotives, 58-55 tons, std. ga.
Lima-Shay geared locomotives, 50, 42, 40 tons.
Whitcomb 8-ton gas locomotives, 24″ gauge (4).
American ⅝-yd. steam r.r. shovel-crane, 28′ bm.
Shovels, 4, 3, 2, 1¾, 1-yd., electric, steam, gas-air, gas-electric; 2 and 3-yd. draglines.
Hydroelectric gen. plants, 65′, 60′, 35′ heads.
B-Erie 52B Diesel 2-yd. shovel front att.

H. Y. SMITH CO., 828 N. B'way, Milw. 2, Wis.

FOR SALE

1—75′ x 140′ Steel Building—4 yrs. old.
2—500 HP Heine W. T. Boilers, 200# P.
1—150 & 100 KW A.C. Gens. D/C 4 Val. Engs.
1—300 KVA Generator D/C F-M Full Diesel.
1—24″ x 36″ Jaw Crusher with Bucket Elevator.
1—18″ Portable Belt Conveyor—other sizes.
1—75 & 50 KVA Generators D/C Steam Engs.
1—4000′ Air Compressor & 750 HP Diesel Eng.

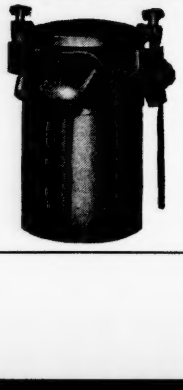
H. & P. Machinery Co., 6719 Etzel, St. Louis 14

GENERATORS

200 Ampere 6-8-volt plating generator, $65.00. 50 Ampere 12-volt generator, $17.50. Also other bargains.

BUTLER ELECTRIC COMPANY
1885 Milwaukee — Chicago 47

-TRANSFORMERS-



1—2500 KVA 26400/13200-480/460 V. 3-ph.
2— 500 KVA 12240-123/213Y V. 3-ph.
3—1667 KVA 45100-2300/4000Y V.
3— 500 KVA 13200-2300 V.
3— 333 KVA 22000-2300/4000Y V.

One Year Guarantee

THE ELECTRIC SERVICE CO., INC.
"AMERICA'S USED TRANSFORMER CLEARING HOUSE"
STATION M — Since 1912 — CINCINNATI 27, OHIO

I don't mind work. *But I am sick and tired of fighting winter.* Idle machines — because men can't get to work . . . interrupted shipments—in and out . . . increased fuel costs. So help me, I am going to look around for a plant location where snow, sleet and ice are conspicuous only by their absence.

. . . . . .

MR. JONES DECIDES TO DO SOMETHING ABOUT THE WEATHER

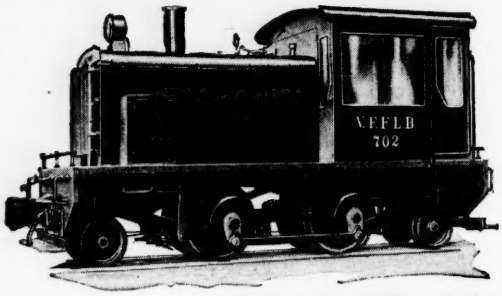
Here in Georgia a mild climate allows uninterrupted production the year-round. Plant construction costs less. Fuel costs are lower. Here you will find abundant raw materials, plenty of good soft water, excellent transportation facilities, dependable electric power at low rates, an ample labor supply—99% native-born. You will find too a widespread spirit of friendliness, mutual respect and confidence between workers and management. In Georgia a *friendly* people and a *friendly* climate help smooth the way for profitable operation.

In many of Georgia's excellent small towns where there are no large industries, you will find an ample supply of intelligent, adaptable, friendly workers. Our staff of industrial engineers has assembled accurate data on favorable industrial sites for specific lines of manufacture. Write Industrial Development Division, **GEORGIA POWER COMPANY, ATLANTA, GEORGIA.**

PLANT the Future in

GEORGIA

IMPROVED HAULAGE
and
RECONVERSION



Leading and trailing trucks permit adequate speeds with SAFETY where track is uneven.

If reconversion means more to you than merely GOING BACK to your pre-war type of production—if, instead, it means GOING AHEAD to better meet the combined challenge of keener competition, rising costs and price controls — THEN — Improved Haulage, the Davenport Way, deserves your consideration.

DAVENPORT LOCOMOTIVES — Serving all over the World

A Davenport Better-Built Locomotive built to FIT your particular haulage requirements will create savings through lower ton-mile costs while delivering extra years of satisfying service.

Better-Built **DAVENPORTS** *are AVAILABLE in* **STEAM GASOLINE DIESEL** *with* **ELECTRIC** *or* **MECHANICAL DRIVE**

FREE HAULAGE ANALYSIS

Davenport engineers will be glad to receive a description of your haulage conditions—grades, curves, distances and work to be done. They will analyze your needs and submit reliable recommendations to point the way to haulage economy. No obligation whatsoever.

Complete Information on Request

ARMY ★★ NAVY

EXPORT OFFICE
BROWN & SITES CO., INC.
50 Church Street, New York
Cable Address
"BROSITES"

DAVENPORT LOCOMOTIVE WORKS
A DIVISION OF DAVENPORT BESLER CORPORATION, DAVENPORT, IOWA

(*Continued from page* 8)

The evident determination of Congress to reduce the powers of the central government stems the belief that the average citizen is tired of having his daily life controlled and ordered by federal officials.

He does not believe that a bureaucrat in Washington knows as much about his problems as do the people in his own state or community. He is fed up with planning and confused by the red tape which centralized government brings into being. He thinks that state and local officials are much easier to approach and much more likely to listen to him than some vague personality in Washington.

"Within recent years new forces have been working upon the men who make our laws. They are forces with which the majority of the American people, the majority of law makers, and the majority of business cannot agree. The manipulators of these forces are clever. They say one thing and mean another." As business men, we are forced to take more interest in elections. We cannot, we dare not, sit idly by and let agitators or advocaters of foreign-isms—by subterfuge, by threat, and by force, take from us the system which enabled us to win this war. They must not rob us of the tools to win the peace."

A. GRAVES WILLIAMS
Alabama State Chamber of Commerce

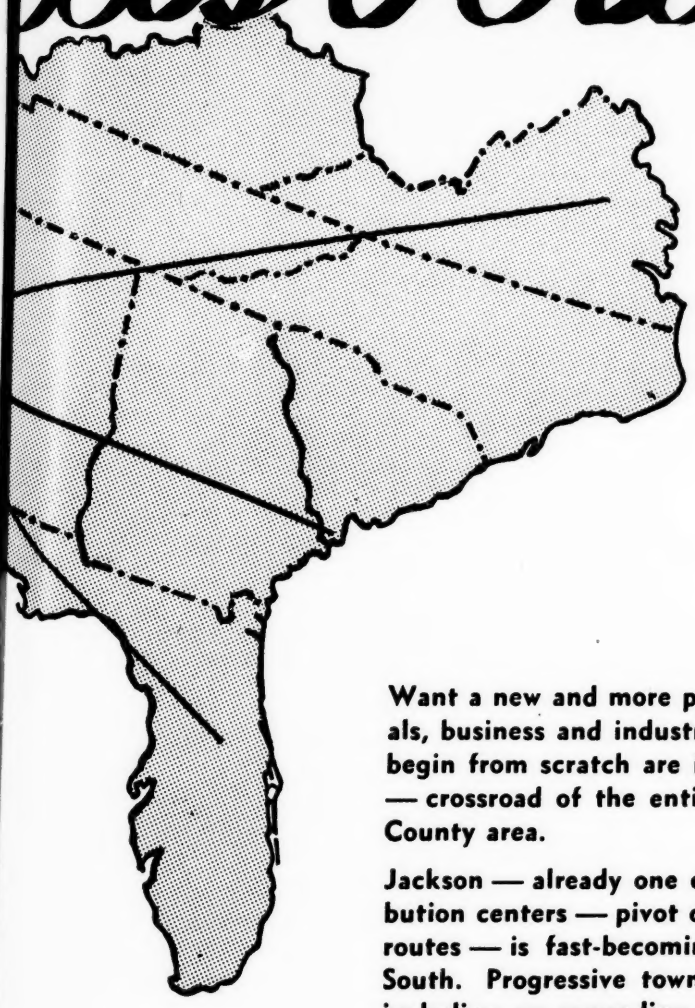
The South's 1945 cotton crop is falling far short of supplying textile demands. The Memphis, Tenn., *Commercial Appeal,* after polling the cotton men, forecasts a crop of only 8,978,000 bales. The Agriculture Department's last estimate, November 1, pegged the total at least 390,000 bales better.

The Big Four of the cotton belt—Texas, Mississippi, Arkansas and Alabama—have a combined estimate of 5,475,000 bales, 110,000 less than forecast by the Agriculture Department in November.

Advance orders for the forthcoming edition of THE BLUE BOOK OF SOUTHERN PROGRESS indicate a nation-wide, accelerated interest in the industrial development and expansion which is taking place in the southern states. Published annually by MANUFACTURERS RECORD, the BLUE BOOK is widely recognized as an authoritative source of accurate data on the industries, manufactures, agriculture, minerals, forests and other natural resources of the South. Among the many subjects treated are population, banking, insurance, education, transportation and power, while carefully prepared summaries running back to the turn of the century accurately portray the vast economic strides in many fields which the South has made in the past 45 years.

(*Continued on page* 24)

...ds County AREA



Want a new and more promising location? Individuals, business and industry seeking to relocate or to begin from scratch are invited to consider Jackson — crossroad of the entire South — and the Hinds County area.

Jackson — already one of the South's major distribution centers — pivot of main-line air and surface routes — is fast-becoming oil capital of the deep South. Progressive towns and diversified farming, including an expanding and valuable livestock industry, make Hinds County a trade territory worth exploring. Substantial industries and business, already established, — developing natural resources and, the "go-ahead" spirit of the people assure a sound and balanced economic future.

FOREST

MISSISSIPPI

invites Industry!

•

To the manufacturer who wants to get away from the crowded conditions of large cities . . . . where the man who works for him can own a good-sized piece of land on which to have a few head of stock or raise some fruits or vegetables . . . . where he can get out his fishing rod or his gun and have some recreation right close to his job . . . . Forest offers an ideal opportunity!

Added to the contented worker who is not under the dictatorship of a labor boss, Forest offers a manufacturer cheap factory sites, lowest taxes, Y. and M. V. Railroad, bus and truck service over Highways 80 and 35, ample power and cheap fuel and water.

Forest is the headquarters for Bienville National Forest; center of the largest Broiler industry in Mississippi; fine stands of Pine and Hardwood adjoining, and highly productive corn, cotton, hay and grazing lands.

The 3,000 citizens represented by this organization invite you to look over this progressive, growing community!

WRITE

FOREST PLANNING and DEVELOPMENT BOARD

FOREST, MISSISSIPPI

R. L. GOODWIN, *Secretary-Treasurer*
Farmers and Merchants Bank

V. R. LACKEY, *Chairman*
Lackey Lumber Co.

H. E. BISHOP,
Mayor

(*Continued from page* 16)

Realization of the efficacy of advertising is not restricted to industrial and commercial interests. The assembly of the Church of England has voted unanimously to appropriate $4,000,000 in a five-year advertising and public relations program "to overcome the spiritual anemia of the British people."

An Industrial Bulletin survey discloses that postwar industrial research laboratories are likely to employ about three times as many scientists as before the war and that research expenditures will double every five years. In the new research program envisioned, laboratories will occupy as much space as office buildings and will be strategically located in relation to all other plant facilities. Research appears headed for a boom period.

The coming year promises to be a good one for the rubber industry of the South. It is predicted that approximately 900,000 tons of rubber products will be consumed in the United States in 1946. This compares with 653,000 tons consumed in 1940, the last full year of peacetime conditions.

Of the total for 1946, it is estimated that 250,000 to 350,000 tons will consist of natural rubber imported from rejuvenated plantations in the Far East. The remainder, around 600,000 tons, will be of synthetic rubber, a large portion of which will be produced in southern war-built plants.

Some idea of the extent to which the federal government entered the public housing field during the war may be seen in the case of Wilmington, N. C. By the end of the year 1943, a total of $15,908,100 had been expended on war housing projects. Construction consisted of 5,499 dwellings at an average cost of $2,893 per dwelling. By the same date, shipyard employment in Wilmington had reached a peak of 20,800 persons. The end of the war and a lessening in number of shipyard workers has brought about steps for disposal of the housing units. Housing authorities have recommended that 2,962 of the housing units be declared temporary and be demolished; the remainder to be sold, largely to private owners.

Texas has planted more cork oak acorns than any other southern state and is continuing the experiment in widely scattered sections. As the cork oak grows slowly, its commercial possibilities here may not be fully known for many years.

The thousands of requests for acorns indicate a widespread interest in this tree, which comes from the western Mediterranean.

The commercial importance of the cork oak is seen in the annual production of 300,000 tons a year, more than half of which is used in the United States.

(*Continued on page* 32)

Gulfport, Mississippi

LOCATED on the Gulf of Mexico—a deep-water port with municipal pier and warehouses—export and import cargo exempt from advalorem taxes.

Junction point of Illinois Central and Louisville & Nashville Railroads—also Federal Highways numbers 90 and 49.

Headquarters of Mississippi Power Company, District Headquarters of United Gas Corporation. Fertilizer manufacturer, creosoting plant, garment factory, cotton compress and other well established industries.

Ideal living conditions, equable climate, artesian wells with pure water and every recreational facility. Excellent public school system. City of home-owners. Modern hotels. Neighborly people. Location of privately-owned Gulf Coast Military Academy and Gulf Park College.

Post War Opportunity

In that revolutionary post-war period, in which industry and business seek surroundings combining the advantages of climate, labor, liveability and a united community, Gulfport is well worth investigating.

With good municipal government, a live Chamber of Commerce and citizens cooperating, the industrial soil of this up-and-doing city is fertile for those seeking factors conducive to new enterprise.

WRITE:

Gulfport Chamber of Commerce

B. J. TURNER, *Secretary*

Gulfport, Mississippi

Here's Reconversion

FROM
AMMUNITION BOXES
TO
FURNITURE AND OTHER
PRODUCTS FROM
PINE AND HARDWOODS

•

During the war we turned out thousands of boxes ready to load with ammunition for our Armed forces; also Pallets for the Navy.

We are manufacturers of Yellow Pine and Hardwood lumber and cut to length stock a specialty.

We are now making furniture dimension stock, door and window frames, crating, kiln dried cut-to-length stock for radio cabinets, bed rails, back rails and other furniture stock. We have a well equipped planing mill, dry kilns, and ample storage. Our plant is located in Central Mississippi on the Y & M V Railroad and in the edge of the Bienville National Forest.

We are glad to be located in Mississippi, and in the Town of Morton, a thriving little town and community, where the only privately owned egg drying plant in the United States is located. We are proud of our good schools, churches, bank, roads and the good people who live in this section.

•

A. B. FARRIS

STEWART-FARRIS and MYERS
LUMBER COMPANY

Manufacturers
Yellow Pine :: Hardwood Lumber

MORTON, MISSISSIPPI

(*Continued from page* 24)

In the field of life insurance, the American people have voluntarily instituted the greatest cooperative movement in free enterprise known to history. On January 1, 1945, the American people owned life insurance totaling $149,071,406,006, a figure that staggers the imagination. This was done on a voluntary basis, without government direction or interference. There is no reason why the American people cannot just as well cooperate voluntarily in protecting themselves against sickness and disability.

Dr. Arthur Compton, uranium research scientist, expresses the belief that some time within the next ten years will see power companies considering the use of atomic power for industrial purposes. Dr. Compton is director of the National Academy of Science's committee on use of uranium in war. Giving strength to his belief is the report that a new $8 million laboratory of General Electric Co., will be devoted in large part to nuclear research.

Experience with the "cooling-off" provision of the Smith-Connally Act proves that labor's passions rarely cool during the 30 days between certification and strike. This act has demonstrated apparently that the throw of the switch, starting that 30 day period, is the psychological fillip needed to make the union rank and file strike conscious. Aware of the struggle ahead, the rank and file cooperate with their leaders during these 30 days as they never did before to build up the strength of the union to its peak—soliciting funds from other unions, renting and furnishing strike headquarters, scheduling the manning of picket lines, arranging boycotts, obtaining support from the home-town merchants who will suffer if a strike breaks, etc.

The Southern Association of Science and Industry has offered to provide a research staff through which the Southern Governors' Conference can co-ordinate efforts at industrial development in this area.

While complete details remain to be worked out, the proposed co-operative program to develop the south's latent potentialities seems a logical approach to a problem of great regional concern.

"We are about to ride a wave of development in the South, but it needs direction and stimulation," Lloyd C. Byrd, president of the industrialists' association, is quoted as saying.

Twenty-three per cent of the police expenses of El Paso, Texas are paid by parking meter revenues, according to a recent article in *The American City.* Original cost of the meters was $46,000. By the end of 1945, they will have yielded $400,000. Of 625 parking meters purchased ten years ago, 600 are still in good working condition.

ARMSTRONG TIRE AND RUBBER COMPANY

Natchez, Mississippi

MANUFACTURING TIRES AND TUBES

● ***One of Mississippi's Largest and One of the World's Finest Manufacturing Plants***

FROM the standpoint of architectural design, modern equipment and exceptionally efficient straight line production methods, the Armstrong plant at Natchez is one of the industrial show places of the South. It symbolizes Mississippi's growing importance as an industrial state.

Completed in 1939, the Armstrong factory is the newest and one of the most efficient plants in the tire industry.

The Armstrong factory at Natchez is the southern manufacturing unit of The Armstrong Rubber Company of West Haven, Connecticut, one of the oldest tire manufacturers in the industry.

Armstrong tires are sold throughout the United States by Independent local merchants.

• • •

ARMSTRONG TIRE AND RUBBER COMPANY

Natchez, Mississippi

DELFAIR
OAK FLOORING
• • AND • •
INTERIOR TRIM

•

OUR modern hardwood flooring plant, principally red and white oak, has recently been completely rebuilt. It is electrically operated throughout and equipped with the latest type of machinery. We have new Moore cross circulation, dry kilns of brick, concrete and steel construction.

The texture of our Southern yellow pine is ideal for mouldings and interior finish, combining structural strength with lightness, producing high grade framing material for house construction.

We also produce Southern yellow pine dimension, boards and interior trim processed in our modern planing mill and sold on S. P. I. B. grades.

•

D. L. FAIR
LUMBER COMPANY

Member: National Oak Flooring Manufacturers Association

Louisville, Mississippi

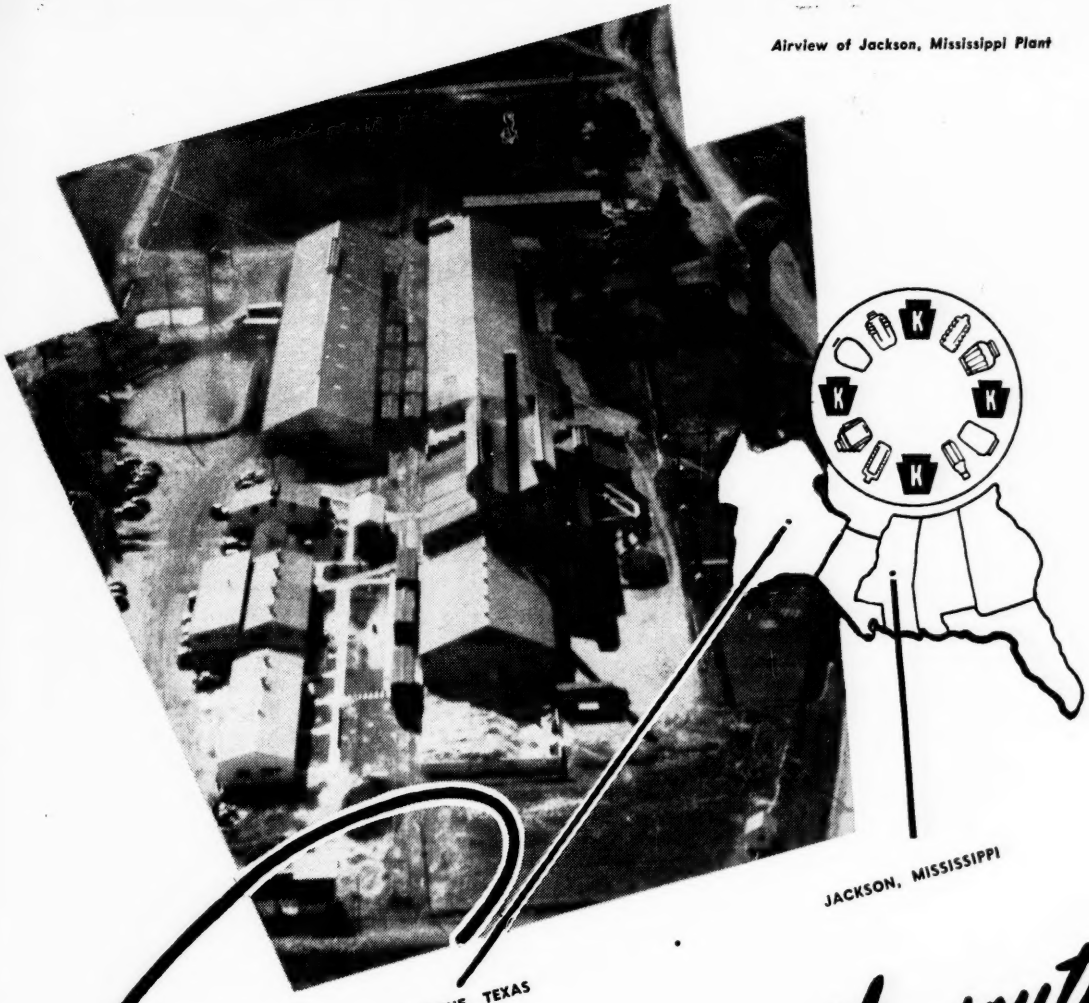
Southern Industry Expansion Closely Related to Reconversion

Industrial expansion for the South in the years immediately ahead depends in large measure on the success to be attained in converting to peacetime production war plant facilities running into billions of dollars. The most difficult problem in this connection is presented by a number of specialized plants constructed solely for war production. These consist primarily of shipbuilding, aircraft and munitions factories representing huge investments in plants and equipment. The relative importance of these plants in the near future of the South's economy is readily apparent when it is considered that employment in these industries in 1940 constituted almost 50 per cent of the factory workers in the states in which they are located.

A government survey covering reconversion progress in regional areas, and completed at present for the southeastern area embracing Florida, Georgia, Alabama, Tennessee, Mississippi and Louisiana, discloses that thus far contract terminations amounting to $1,000,000,000 have been accomplished without serious disorder or confusion. While lay-offs are seen to have produced wide-scale unemployment in some sections, the overall number of job openings appears equal to, and in many instances greater than, the number out of work.

The textile industry has displayed especial speed in attaining reconversion status, its only drawback apparently being the slowness of warworkers in other industries to return to their pre-war textile employment. The steel industry likewise has made good progress. As in the case of textiles, few changes were necessary to reconvert to civilian production. These plants, originally equipped to roll rails, beams and plates, were enabled to adjust to wartime use and back again by making minor adjustments in rolls to meet changed specifications. The smaller metal-fabricating plants, foundries, woodworking and furniture plants report equal success.

Southern shipbuilding yards appear to offer the greatest problem to continued full operation. Although plans are being considered for their peacetime utilization, it appears likely that not all of these plants will be able immediately to resume operations on a full scale. Next in order of their difficulty of solution are the aircraft plants located at Marietta, Ga., Birmingham, Ala., New Orleans, La., Nashville, Tenn. and Miami, Fla. These are all huge plants and plans for their future have not yet completely crystallized. Prospects for these facilities, however, are admittedly much brighter than for the shipyards and each community in which they are located reports optimism regarding their ultimate profitable utilization.



Airview of Jackson, Mississippi Plant

JACKSON, MISSISSIPPI

PALESTINE, TEXAS

Situated to serve the south

2 Knox Plants located advantageously across the South assure quick, economical supply and service to all Southern users of glass containers. Knox better glass containers can reach all areas in the developing new South faster and more economically. The Knox staff of skilled technicians can help you solve your glass packaging needs—they can give you promptly the benefit of years of Knox training and experience. Knox is situated to serve the South!

EVERY KNOX Container A BOOST FOR YOUR PRODUCT

KNOX GLASS BOTTLE CO.

Palestine, Texas — Jackson, Mississippi

SOLVE YOUR

MANPOWER PROBLEM

with the

"LOGGERS DREAM"

•

The most efficient method of bunching and loading logs. Handles tougher jobs better and quicker and with fewer men. Moves itself at truck speed. Quick to set up, fast and powerful four speed drum. Rehaul helps you get timber from bad places at low cost per thousand. Gets your logs where livestock or machines fail that depend on traction. Fine to load railroad cars. An answer to a "Loggers Dream."

Send for circular and performance data.

•

TAYLOR'S MACHINE WORKS

Louisville, Mississippi

Riding Down the Rider

President Truman's veto of the war appropriation cutback bill because it carried a vicious rider took the kind of courage one likes to see in the White House. It was also completely justified. The rider, in the first place, concerned an issue irrelevant to the main purpose of the bill and one which, in the President's words, "deserves not only permanent legislation, but legislation carefully and separately considered. It has long been considered a fundamental principle," said the President in his surprisingly and welcomely tart veto message, "that legislation on a major issue of policy ought not to be combined with an appropriation measure. The present bill directly violates that principle." Coming from a veteran of Congress, the enunciation of this principle stirs the pulses like a draft of the kind of air that is associated with wine.

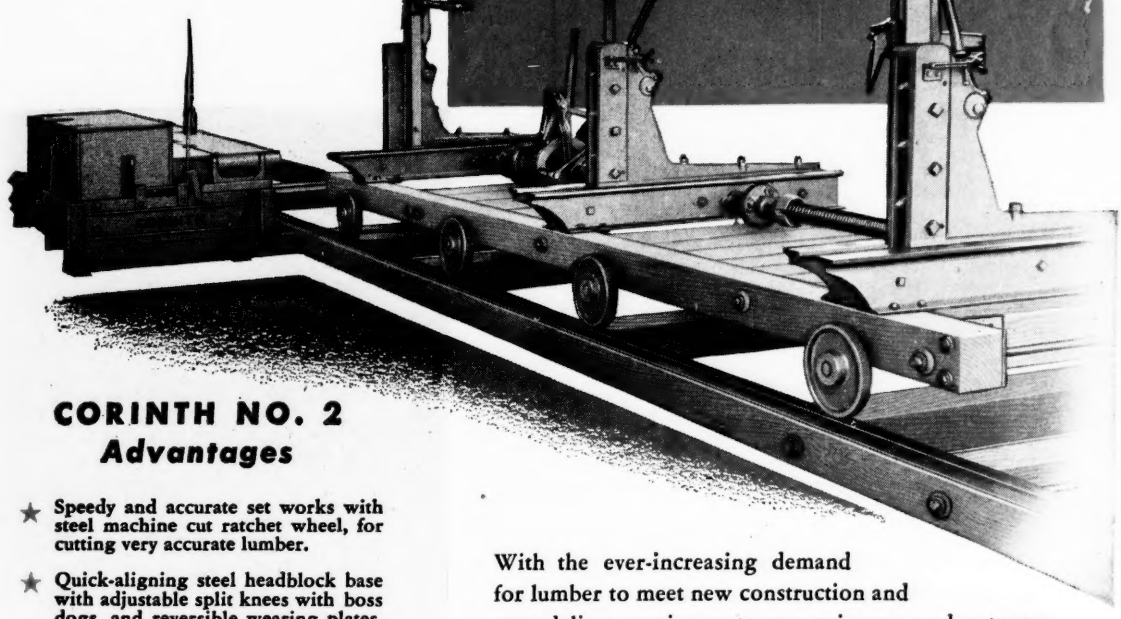
He is right in his indignation on this score and equally in his excoriation of the rider itself, which provides for the return within 100 days of the United States Employment Service to operation by the States. He grants that the Federal government is committed to a return of the sort, but the timing of the transfer, he insists, "is the most disadvantageous that could have been chosen." Our war veterans, he points out, are flooding back to civilian life at the rate of a million a month. Simultaneously a great migration of unemployed war workers is in progress. All these millions are seeking peace-time jobs and desperately require the guidance of a national clearing house which can find them the employment they seek and are fitted for without regard to state lines. The U. S. E. S. has a tougher task ahead of it than the one it performed so effectively in recruiting workers for war plants. It would be a tragic mistake now, instead of availing ourselves of its tested machinery, to decentralize it into its component units.

The President is no opponent of states' rights. He has displayed on more than one occasion his sympathy with the desire at the Capitol that, as soon as conditions permit, the states regain their prerogatives, which in the crisis of the war they yielded to Federal authority. In the case under discussion he has asked merely for a postponement until June 2, 1947, and in the mean time, too, for much more carefully devised provisions of transfer than the ones in the rider. We agree with him on every count.—*New York Herald-Tribune.*

It really is remarkable that our legislators can resist pressure as much as they do. If citizens would take a few minutes off now and then to write their legislative representatives upholding them when they resist extravagant spending and unsound proposals they would render very valuable service to their state and community. The private citizens can rescue our government from pressure groups, if they will take the time and trouble to keep in touch with their legislative representatives.

CORINTH No. 2 SAWMILL

Cuts more fine Lu
... in Less Time
... at Lower Cost



CORINTH NO. 2 *Advantages*

- ★ Speedy and accurate set works with steel machine cut ratchet wheel, for cutting very accurate lumber.
- ★ Quick-aligning steel headblock base with adjustable split knees with boss dogs, and reversible wearing plates.
- ★ Fast, improved heavy-duty belt feed works withstand hard usage.
- ★ Steel machine cut racks and pinions assure long life, and extreme accuracy.
- ★ Adjustable rope feed gears permit easy elimination of slack; caused by wear, between gear and pinion.
- ★ 18" Steel Splitter Wheel.
- ★ Built to take punishment.

With the ever-increasing demand for lumber to meet new construction and remodeling requirements, you gain many advantages by using Corinth No. 2 Sawmills. For instance, this accurate mill can be used as a portable outfit or set up on a permanent foundation. Its sturdy construction enables it to take the terrific punishment of daily operation, year after year. Actual tests have proved that the Corinth No. 2 actually cuts sawing time, is economical to operate and produces *fine* lumber fast. Corinth Sawmills are available in increasing quantities. Send for complete information and delivery dates today. For out-of-the-ordinary sawmill problems, we suggest you ask for the services of a Corinth Engineer. He'll gladly work out the solution and make recommendations.

CORINTH MACHINERY CO., CORINTH, MISSISSIPPI

BUSINESS PROSPERS

Within the state, abundant resources, and at our door, great markets of the East and Mid-west. In South Carolina, nature gives business a head-start with intelligent, native-born workers, rich farms and forests, valuable minerals, good water, a gentle year-round climate and the finest deep-water harbor on the Eastern seaboard, at Charleston. To these natural blessings, we have added excellent shipping facilities, by rail, water, highway and air, moderate tax and power rates, genuine friendliness! For an expert study, relating our advantages to your particular business, write, without cost or obligation, to the State Research, Planning and Development Board, Dept. E, Columbia, South Carolina.

South Carolina

WHERE RESOURCES AND MARKETS MEET

Two-thirds of Appalachian Miners Own Their Homes

Two out of every three coal miners in the Appalachian area, or 63.9 per cent of the total in the nation, own their own homes or rent from private landlords, it is disclosed by a survey made by the Bituminous Coal Institute for the last year of the war. The remainder of the miners, about one out of three, live in coal company homes and pay average rentals of $11.33 per month, equivalent to 4.7 per cent of earnings.

The survey covered 143,926 of the miners of the area which includes all of Pennsylvania, Ohio, West Virginia, Virginia and parts of Kentucky and Tennessee. Combined annual payroll for the miners surveyed totaled $416,756,556, equal to an average of $2,895.63 per miner per year, or $55.67 per week. Individual incomes topping $5,000 numbered 427 and six miners earned more than $7,000 each.

Gross deductions from wages in the amount of $56,268,163 were authorized by the miners surveyed or their families for purchases made at company stores. Such purchases consisted of food and other living expense items and these deductions constituted an average of 13.5 per cent of the total annual earnings. Since company-owned stores represent only about one-third of the merchandising establishments accessible for miner purchases, it is pointed out in the survey that the authorized deductions probably represent only a part of miner expenditures for living expenses.

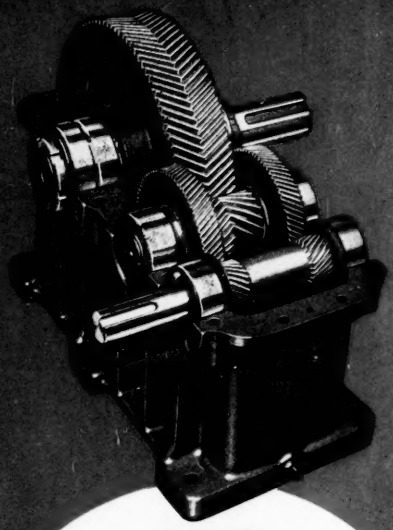
Other deductions from wages consisted of 8.5 per cent of earnings for income and social security taxes; slightly under one per cent for union dues; 4.3 per cent for war bond purchases; and miscellaneous deductions for hospital and medical care, insurance, fuel, light, burial funds, church contributions and similar items totalling 9.4 per cent. After these deductions, the average miner covered by the survey is shown to have received $1,702.63 in net cash for the year, equivalent to $32.62 per week, as savings or for further personal expenditures.

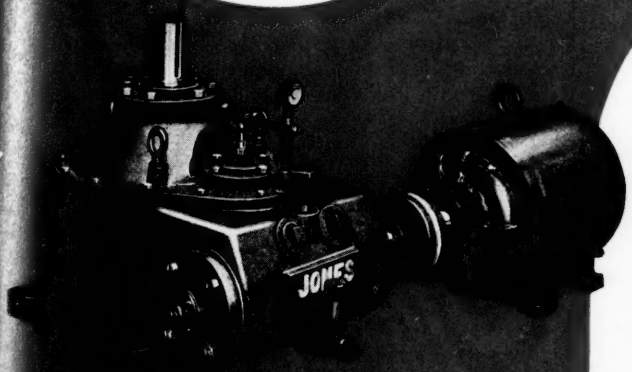
The trend away from mining camps on the part of coal miners, many onto self-owned farms near coal mines, has been observable for a number of years and is interpreted as an advancement by the miners into a more substantial life and more solid citizenship. Many of the homes owned or rented from private landlords are known to be in urban-like communities in which advanced facilities for education and recreation are available. Since the Appalachian area produces 70 per cent of the nation's coal supply, the survey would seem to be representative of a substantial cross section of the country's coal miners.

To help you solve THE PRODUCTION PROBLEM

JONES WORM-HELICAL SPEED REDUCERS for vertical shaft drives

● These machines fill a long felt need for double reduction units of the fully enclosed type to be used for agitators, mixers, ore roasters, bending rolls, etc., requiring a vertical shaft drive. Built in standard ratios in various types of assemblies ranging from 40 to 1 to 250 to 1 for all common motor speeds and a wide range of horsepower ratings. Jones Bulletin No 75 covers complete details.





JONES HERRINGBONE SPEED REDUCERS

● Jones Herringbone Speed Reducers are built in single, double and triple reduction types with a large range of ratios and ratings making it possible to fulfill all ordinary requirements by the selection of standard units.

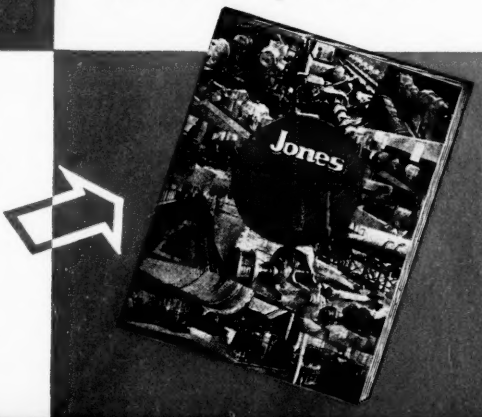
All these reducers have heat treated gears, ground shafts and are mounted with anti-friction bearings throughout.

Catalog No. 70 contains 128 pages of detailed information on the application of these speed reducers.

"JONES DRIVES FOR INDUSTRY"

is the title of a 16-page bulletin that may be helpful in giving you a broad picture of the Jones products, engineering services and manufacturing facilities that are available.

Just ask for Bulletin No. 80



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PILLOW BLOCKS • FRICTION CLUTCHES • TRANSMISSION APPLIANCES

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Dependable!

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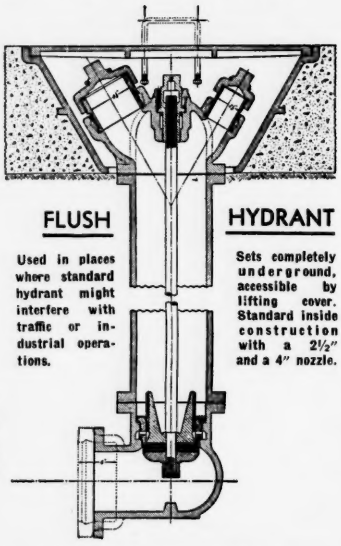

FLUSH HYDRANT

Used in places where standard hydrant might interfere with traffic or industrial operations.

Sets completely underground, accessible by lifting cover. Standard inside construction with a 2½" and a 4" nozzle.

M & H GATE VALVES are cast iron body, bronze mounted, with double-disc parallel seat or solid wedge type, non-rising stem or outside screw yoke. They come either with flanged or screwed connections. Valves for fire protection lines are marked "UA-FM" to denote approval of both the Underwriters and the Factory mutuals.

M & H FIRE HYDRANTS are revolving head, dry top, bronze mounted. They also are approved by "UA-FM". Entire main valve assembly is removable through barrel without digging. Special Traffic Model is fitted with breakable bolts and stem coupling, designed to break at ground under impact. Repairs are made simply by renewing bolts and coupling, without shutting off the water.

M & H PRODUCTS INCLUDE

FIRE HYDRANTS
GATE VALVES
TAPPING VALVES
WALL CASTINGS
SPECIAL CASTINGS
TAPPING SLEEVES
CHECK VALVES
FLOOR STANDS
EXTENSION STEMS
SHEAR GATES
MUD VALVES
VALVE BOXES
FLAP VALVES
SLUDGE SHOES
FLANGE AND FLARE FITTINGS
FLANGED FITTINGS
B & S FITTINGS
CUTTING-IN TEES

M & H VALVE AND FITTINGS COMPANY

ANNISTON, ALABAMA

Southern Pulpwood Industry Offers Thousands of Jobs

Thousands of steady jobs are awaiting ambitious young men in the Southern pulp and paper industry. An intensive campaign, sponsored by Southern firms in coordination with United States Employment Service holds out special offer to returning servicemen and ex-war workers.

Part of a national campaign, the recruitment program is being urgently pushed in Charleston, S. C., and other Southern pulpwood processing centers where immediate opportunity in a wide choice of jobs is available.

Few, if any, industries present brighter prospects for expansion and development than the pulp industry. The demand for pulpwood products, vastly extended during the war, has not relaxed with the end of hostilities. To the contrary, it has been substantially increased by the skyrocketed demand for civilian commodities made of paper or other pulpwood derivatives.

With the nation on the threshold of a new competition in which new materials will challenge established processes, the end- and by-products of paper and pulp rank high among such new materials. From wood pulp come cellulose, acetate, cellulose nitrate, rayon viscose, transparent cellulose and lignin plastics. Southern pulpwood offers an abundant source of all these highly vital ingredients of modern commodities. To many it may also be surprising to learn that the common substance of wood itself has become closely allied to plastics in its susceptibility to molding under heat and pressure. For many years wood has been used as a filler for plastics but it remained for the urgency of war to develop methods by which wood could be molded into fan and propeller blades and a host of similar applications.

The demand for paper itself, still the major pulpwood product, is far from being satisfied. Paperboard containers are meeting undiminished demand. Printing and wrapping papers are still in very short supply. A considerable period will be necessary before supply can balance demand.

The jobs announced as available in the Charleston district alone number over 3,500 and prediction is being made that both the number and variety will be further increased as the industry gains full headway. Jobs as pulpwood cutters, loaders and haulers are especially abundant.

As the output of tung oil increases appreciably it is probable that the paint and varnish industry will be attracted to the South.

The quick-drying property of tung oil is of great value in the manufacture of paints and varnishes.

Tung tree culture extends from Texas through Louisiana, Mississippi, Alabama, Georgia and into Florida.